ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 13 November 2020
Response Date: 20 November 2020
Type of TA Request: Complex

Request:

ASPR TRACIE received a request to conduct a literature search on mental health and pediatric critical care patients in pediatric intensive care units (PICU), their families/support system, and PICU providers.

Response:

The ASPR TRACIE Team reached out to members of our Subject Matter Expert (SME) Cadre for more information. We also conducted a search online and reviewed existing ASPR TRACIE resources for relevant materials (namely the COVID-19 Behavioral Health Resources, Pediatric/ Children Topic Collection, and the Infectious Diseases resources page). Materials gathered can be found in this document.

I. Relevant Studies

Baker, S.C., and Gledhill, J.A., (2017). Systematic Review of Interventions to Reduce Psychiatric Morbidity in Parents and Children after PICU Admissions. (**NOTE**: Abstract only. Contact ASPR TRACIE for full-text article.) Pediatric Critical Care Medicine. 18(4):343-348.

The authors conducted a systemic review of literature from various databases to assess available interventions that are aimed at reducing psychiatric morbidity in parents and children discharged from the PICU. Although there were few studies identified, interventions noted included psychoeducation, support for parents after discharge, intervention support for families at high-risk of developing psychopathology as identified by screening at point of discharge, general follow up with all families, and specific interventions to target PTSD. **NOTE**: An article titled, Interventions to Reduce Psychological Morbidity after PICU Discharge: Challenges to Establishing Efficacy, (abstract only) published in 2018 by Meert, K.L. and Eggly, S. (Pediatric Critical Care Medicine. 18(4): 387–388) addresses a similar study conducted.

Caspani, G., Corbet Burcher, G., Garralda, M.E., et al. (n.d.). Inflammation and Psychopathology in Children Following PICU Admissions: An Exploratory Study. (Accessed 11/17/2020.) BMJ Journal. 21(4).

The authors conducted an exploratory study to assess whether abnormal peripheral blood inflammatory markers measured during PICU admission were associated with psychiatric symptoms after discharge. A cohort of 71 children with septic illness, meningoencephalitis and other critical disorders were evaluated. Findings showed that psychiatric risk post-discharge was associated with abnormal lymphocyte count during PICU admission.

Critical Care News. (n.d.). Mental Health Medication Use in Parents After a Child's PICU Admission. (Accessed 11/17/2020.)

This article addressed a large study that was conducted to examine the use of mental health medication by parents after their child was admitted to the PICU. Antidepressant and anxiolytic incidence rates increased in the 12-month period following PICU discharge.

Colville, G. (2008). The Psychologic Impact on Children of Admission to Intensive Care. (**NOTE**: Abstract only.) Pediatric Clinics. (55)3, P605-616.

This article identifies recurring themes related to the psychological impact that admissions to the PICU has on children and their families. This includes distress in a significant minority of children, and the linkage between anxiety expressed by the parents and the child's psychologic symptoms.

Hartman, M.E., Williams, C.N., Hall, T.A., et al. (2020). Post-intensive-care Syndrome for the Pediatric Neurologist. (**NOTE**: Abstract only.) Pediatric Neurology. 108, p.47-53.

A new term "post-intensive-care syndrome," has been coined to mean "the constellation of physical, emotional, cognitive, and psychosocial symptoms that begin in the intensive care unit and continue after discharge." The authors note that children with primary neurological injury are among those at the highest risk for this syndrome in pediatrics. The authors also state that it is important for pediatric neurologists to recognize and help manage post-intensive-care syndrome as they care for children with acute brain injury throughout their hospitalization and post-discharge.

Kastner, K., Pinto, N., Msall, M., et al. (2019). PICU Follow-up: The Impact of Missed School in a Cohort of Children Following PICU Admission. Critical Care Explorations. 1(8), p. e0033.

The authors recruited parents during their child's admission in the PICU and followed up with them three moths after discharge. Thirty-three parents were enrolled in the study and 21 (64%) completed the follow up via phone. The authors assessed the impact that PICU

admissions had on the child's education and the number of missed school days. The authors note that there were missed opportunities for care coordination and educational support post-discharge. **NOTE**: Although this article does not directly address the mental health impacts of PICU patients and their families, it may provide useful information for this request.

Michelson, K.N., Frader, J., Charleston, E., et al. (2020). A Randomized Comparative Trial to Evaluate a PICU Navigator-Based Parent Support Intervention. (**NOTE**: Abstract only. Contact ASPR TRACIE for full-text article.) Pediatric Critical Care Medicine. 21(9):e617-e627.

The authors conducted a randomized trial on the parents of patients requiring more than 24 hours in the PICU. They compared outcomes from parents who received a navigator-based support intervention for parents, called PICU Supports, with those receiving an informational brochure. PICU Supports included a trained navigator who met with parents and team members to address communication, decision-making, emotional needs, and discharge or end-of-life care needs. They also offered weekly family meetings and conducted post-PICU check-ins. Results indicated that parents who received PICU Supports rated the intervention positively and reported higher decision-making satisfaction scores compared to those who received the informational brochure.

Nelson, L.P., Lachman, S.E., Li, S.W., et al. (2019). The Effects of Family Functioning on the Development of Posttraumatic Stress in Children and Their Parents Following Admission to the PICU. Society of Critical Care Medicine. 20(4):e208-e215.

The authors conducted a prospective, longitudinal, multi-informant observational study of pediatric patients and their parents who were recruited in the PICU. They assessed the rate of acute stress and posttraumatic stress among children and parents following admission and the relation between family function and posttraumatic stress. Results indicated that both children and parents had alarmingly high rates of acute stress and posttraumatic stress following the child's PICU admission. However, family function did not emerge as a predictor in this study.

Peris, A., Bonizzoli, M., Iozzelli, D., et al. (2011). Early Intra-intensive Care Unit Psychological Intervention Promotes Recovery from Post Traumatic Stress Disorders, Anxiety and Depression Symptoms in Critically Ill Patients. Critical Care. 15(1): R41.

The authors conducted an observational study in critical patients admitted to the ICU. The control group included patients who did not receive psychological intervention before being admitted to the ICU, and the intervention group included patients who were involved in a clinical psychologist program. Results indicated that patients in the intervention group had lower rates of anxiety and depression than those in the control

group. **NOTE**: This study was not specific to pediatrics but may contain useful information for this request.

Rady, H., Ismail. O.R., Abdelkader, M.S., et al. (2020). Increased Psychiatric Risk in Children After Pediatric Intensive Care Unit Admission. (**NOTE**: Abstract only.) The Journal of Nervous and Mental Disease. 208(2), p. 147-151.

The authors conducted a cross-sectional study of 130 children aged six to 13 years old. They were divided into two groups of 65 children: one group was discharged from the PICU and the other group was discharged from general wards. Results indicated that the PICU group had significantly higher levels of PTSD and were at higher risk of psychiatric morbidities compared to the general ward group.

Sanchez, R., and Hoehn, K.S. (2019). First Do No Harm: How Do We Mitigate the Stress on Children and Families During Their PICU Stay? (**NOTE**: First page only. Contact ASPR TRACIE for full-text article.) Pediatric Critical Care Medicine. 20(4): p 394-395.

The authors address the long-term psychologic effects experienced by the parents of children in PICUs, including posttraumatic stress disorder (PTSD). The authors concluded that PICU providers should be aware of these effects, provide guidance and support resources to families, and continue to follow up with them after leaving the PICU.

Stremler, R., Haddad, S., Pullenayegum, E., et al. (2017). Psychological Outcomes in Parents of Critically Ill Hospitalized Children. (**NOTE**: Abstract only.) Journal of Pediatric Nursing. 34, p.36-43.

The authors conducted a descriptive, cross-sectional study to determine the prevalence of, and factors associated with anxiety, depressive symptoms and decisional conflict in parents whose children were hospitalized in the PICU. The authors noted that it would be beneficial to screen for those at risk and implement interventions to promote coping strategies and reduce decisional conflict. They also added that pediatric nurses have a critical role in that they can help to assess parents' psychological distress and promote family health during a child's hospitalization.

Sylwanowicz, L., Schreiber, M., Anderson, C., et al. (2017). Rapid Triage of Mental Health Risk in Emergency Medical Workers: Findings from Typhoon Haiyan. (**NOTE**: Abstract only. Contact ASPR TRACIE for full-text article.) Disaster Medicine and Public Health Preparedness 12(1):19-22.

The authors conducted a study to determine how effective a responder mental health self-triage system was in predicting PTSD in emergency medical responders who responded

to Typhoon Haiyan, which struck the Philippines in November 2013. Responders completed the Psychological Simple Triage and Rapid Treatment (PsySTART) responder triage tool, the PTSD Checklist (PCL-5) and the Patient Health Questionnaire-8 (PHQ-8) shortly after responding to this disaster. Results indicated that several of the PsySTART risk factors were predictive of clinical levels of PTSD as measured by the PCL-5 in this sample of participants.

Yagiela, L., Carlton, E.F., Meert, K.L., et al. (2019). Parent Medical Traumatic Stress and Associated Family Outcomes After Pediatric Critical Illness: A Systematic Review. (**NOTE**: Abstract only. Contact ASPR TRACIE for full-text article.) Pediatric Critical Care Medicine. 20(8):759-768.

The authors conducted a systematic literature search of several data sources to analyze the information gathered related to medical traumatic stress on parents associated with their child's illness that required PICU admissions. They concluded that parent and family outcomes after pediatric critical illness are impacted by several factors, including familial preexisting factors, a parent's subjective experience in the PICU, and family life stressors post-discharge. They also noted that an effective approach may be to develop interventions that are focused on modifying the parent's subjective experience in the PICU.

II. Relevant Web Pages

ASPR TRACIE. (2020). COVID-19 Behavioral Health Resources.

The resources in this collection were created by federal agencies and their partners to help healthcare providers, caregivers, and the general population prepare for and manage the negative behavioral effects that can accompany a public health emergency. In particular, please review the Resources for Caregivers: Children section. **NOTE**: These resources are general in nature for any pediatric population and do not necessarily address children in PICUs.

ASPR TRACIE. (2020). Pediatric/ Children Topic Collection.

This Topic Collection contains resources that can help healthcare facilities, healthcare coalitions, and other health and medical providers consider the specialized care and resources needed for children prior to, during, and after an incident. In particular, please review the Mental and Behavioral Health section.

Cope for Hope. (n.d.). The COPE PICU Program. (Accessed 11/17/2020.)

> The COPE (Creating Opportunities for Parent Empowerment) PICU Program is an "evidence-based, educational-behavioral intervention program" for parents who have children ages 2 to 7 years old that are admitted to the PICU. The program begins shortly after PICU admission and is provided 2-3 days post-discharge. As noted on this web page, the program is "designed to ease adjustment to hospitalization and help prevent parent and/or child mental health problems."

Torres, A. (2015). When Your Child's in the Pediatric Intensive Care Unit. KidsHealth.

> This web page provides information for parents who have a child in the PICU. It includes an overview of what they can expect while their child is in the PICU and tips on how to ensure they care for themselves as well. **NOTE**: The upper, right corner of this web page includes links to other useful web pages, such as When Your Baby's in the NICU, Caring for a Seriously Ill Child, Caring for Siblings of Seriously Ill Children, and Taking Care of You: Support for Caregivers.

Western Regional Alliance for Pediatric Emergency Management (WRAP-EM). (2020). Mental Health Resources for Children, Families and Providers in Response to the Emerging Coronavirus Disease 2019 (COVID-19).

> This web page provides links to several resources related to mental health and pediatrics and their families or support groups.