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Authors

Devaskar, Sherin U
Cunningham, Coleen K
Steinhorn, Robin H
et al.

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Academic Health Centers and Humanitarian Crises: One Health System's Response to Unaccompanied Children at the Border

Sherin U. Devaskar, MD, Coleen K. Cunningham, MD, Robin H. Steinhorn, MD, Cynthia Haq, MD, Johnese Spisso, RN, MPA, William Dunne, Juan Raul Gutierrez, MD, MPH, Coleen Kivlahan, MD, MSPH, Michelle Bholat, MD, MPH, Suzanne Barakat, MD, Mary Lou de Leon Siantz, PhD, RN, Stephanie Romero, MPA, Chad T. Lefteris, Samantha Gaffney, MSHA, MBA, Jaime Deville, MD, Carlos Lerner, MD, MPhil, Jasen Liu, MD, Cynthia L. Kuelbs, MD, Sudeep Kukreja, MD, Charles Golden, MD, Zoanne Nelson, MBA, Kristie Elton, MSPT, and Carrie L. Byington, MD

Abstract

University of California Health (UCH) provided a system-wide, rapid response to the humanitarian crisis of unaccompanied children crossing the southern U.S. border in the midst of the COVID-19 pandemic in 2021. In collaboration with multiple federal, state, and local agencies, UCH mobilized a multidisciplinary team to deliver acute general and specialty pediatric care to unaccompanied children at 2 Californian emergency intake sites (EISs). The response, which did not disrupt normal UCH operations, mobilized the capacities of the system and resulted in a safe and developmentally appropriate environment that supported the physical and mental health of migrant children

during this traumatic period. The capacities of UCH's 6 academic health centers ensured access to trauma-informed medical care and culturally sensitive psychological and social support. Child life professionals provided access to exercise, play, and entertainment. Overall, 260 physicians, 42 residents and fellows, 4 nurse practitioners participated as treating clinicians and were supported by hundreds of staff across the 2 EISs. Over 5 months and across both EISs, a total of 4,911 children aged 3 to 17 years were cared for. A total of 782 children had COVID-19, most infected before arrival. Most children (3,931) were reunified with family or sponsors. Continuity of

care after reunification or placement in a long-term shelter was enhanced by use of an electronic health record. The effort provided an educational experience for residents and fellows with instruction in immigrant health and trauma-informed care. The effort benefitted from UCH's recent experience of providing a system-wide response to the COVID-19 pandemic. Lessons learned are reported to encourage the alignment and integration of academic health centers' capacities with federal, state, and local plans to better prepare for and respond to the accelerating need to care for those in the wake of disasters and humanitarian crises.

In spring 2021, the United States experienced a significant increase in the number of unaccompanied children arriving at the southern border, primarily from El Salvador, Guatemala, and Honduras; arrivals

in March and April 2021 were the highest ever recorded.¹ The Office of Refugee Resettlement (ORR) defines an unaccompanied child as one who has no lawful immigration status in the United States, is under 18 years of age, and has no parent or legal guardian in the United States or has no parent or legal guardian in the United States who is available to provide care and physical custody.² The arrival of these children, combined with the COVID-19 pandemic restrictions on licensed shelter beds, triggered a humanitarian crisis and the need for emergency intake sites (EISs).

Academic health centers (AHCs) have multiple capacities, including faculty and staff with expertise that can be brought to bear on ameliorating public health emergencies if these resources can be coordinated with the existing activities of local, state, and federal agencies. Therefore, the purpose of this article is to demonstrate that a well-organized collaboration of AHCs can augment local, state, and federal capacity in

meeting the growing humanitarian crisis of border crossings by unaccompanied minors.

We describe the University of California Health (UCH) system's rapid response to provide health care to unaccompanied minors at the southern U.S. border between March and July 2021 to demonstrate that an integrated response that includes AHCs in addition to local, state, and federal agencies is possible and, in many ways, superior to relying on individual health care professional volunteerism to address humanitarian crises. The UCH effort was bolstered by the experience of a recent system-wide response to the COVID-19 pandemic. UCH was able to provide trauma-informed acute general and specialty pediatric care and supported the social and daily needs of the children at 2 EISs while local, state, and federal agencies worked toward ensuring their safe and timely reunification with families or sponsors.

Please see the end of this article for information about the authors.

Correspondence should be addressed to Carrie L. Byington, University of California Office of the President, 1111 Franklin St., 12th Fl., Oakland, CA 94607; telephone: (510) 987-9550; email: carrie.byington@ucop.edu; Twitter @carrie_byington.

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Benefits to local, state, and federal agencies included a single point of contact to a wide range of credentialed pediatric health care professionals; access to an electronic health record (EHR) that facilitated communication in the EISs and, upon reunification, transfer to community physicians; and access to individuals who were expert in creating developmentally appropriate activities and spaces for children. The UCH system experienced a number of benefits from the engagement, including an opportunity to test our emergency capacity, the ability to offer experiential training for postgraduate trainees (i.e., residents and fellows), and a strengthening of professional bonds across the system through the completion of a mission to protect and care for vulnerable children, which was closely tied to the values of the participating hospitals, professional schools, and health care professionals. Here we report on the process and lessons learned to encourage greater collaboration with and integration of AHCs in local, state, and national emergency preparedness planning.

Context and General Timeline

U.S. law requires all unaccompanied children from countries other than Canada or Mexico to be referred to the U.S. Department of Health and Human Services (HHS) by the receiving party, usually the U.S. Customs and Border Protection (CBP), within 72 hours. HHS is then responsible, through the ORR, for placing children in state-licensed shelters where they are protected and receive case management, educational services, and medical care, including mental health care.¹

Following the 9/11 attacks in 2001, there has been increased attention to the needs of children during disasters. Congress convened the National Commission on Children and Disasters in 2007.³ The commission identified many shortfalls in the care of children and issued a report to the U.S. President in 2010.⁴ In addition to federal agencies, the American Academy of Pediatrics issued guidance for the care of children during disasters, including recommendations for mental health care in 2015.^{5,6} However, in these national reports, the role of AHCs, including children's hospitals, in collaboration with local, state, and federal agencies in the acute management of disasters is not well developed.

Although there has been progress and greater coordination among federal agencies for the care of children during disasters since 2010, HHS and the U.S. Department of Homeland Security, which includes CBP and the Federal Emergency Management Agency (FEMA), were unable to provide for all the medical needs of the thousands of unaccompanied children at the southern border in 2021. The COVID-19 pandemic added additional complexity. The immediate health and safety needs, as well as reunification plans, for these children required collaboration among federal, state, and local governmental agencies to create temporary emergency facilities where the children's physical and mental health needs could be addressed.

In early March 2021, the city of San Diego was asked to identify a location for an EIS. A timeline of this and other EIS-related events is shown in Figure 1. The local city government in collaboration with the University of California, San Diego (UCSD) and Rady's Children's Hospital identified the San Diego Convention Center (SDCC) as an option and opened an EIS there on March 27, 2021. It was clear that this site would be expected to operate for several months and require the support of hundreds of health care professionals to be adequately staffed. It was also clear that additional EISs would likely be needed in California.

On March 30, 2021, the UCH system was invited by the Association of American Medical Colleges to meet with leadership of the Centers for Disease Control and Prevention (CDC), National Institutes

of Health, and U.S. Department of Homeland Security to discuss temporary alternative options to support the medical needs of the rapidly increasing numbers of unaccompanied children. The start-up of new EISs across the country around this time created a pressing need for health care professionals to help staff them; thus, federal leaders requested that UCH physicians and staff individually volunteer at EISs to fulfill this pressing need.

Rather than send individual health care professionals to sites across the United States, UCH leadership decided to work together as one health system to sustain UCSD's engagement at the SDCC and subsequently support an additional EIS through the partnership of the University of California, Los Angeles/Mattel Children's Hospital and University of California Irvine/Children's Hospital of Orange County at the Long Beach Convention Center (LBCC). A second EIS site was opened at the LBCC on April 22, 2021. Both the SDCC and LBCC EISs operated through July 2021.

UCH includes 6 AHCs with 20 health care professional schools across California. Multiple schools and departments within UCH have expertise relevant to child physical and mental health, as well as immigrant and refugee health. The EISs at SDCC and LBCC benefitted from interschool and interhealth center capacity sharing, collaboration, and communication. The prioritization of the mission by UCH leadership facilitated system-based responses and was critical in rapidly

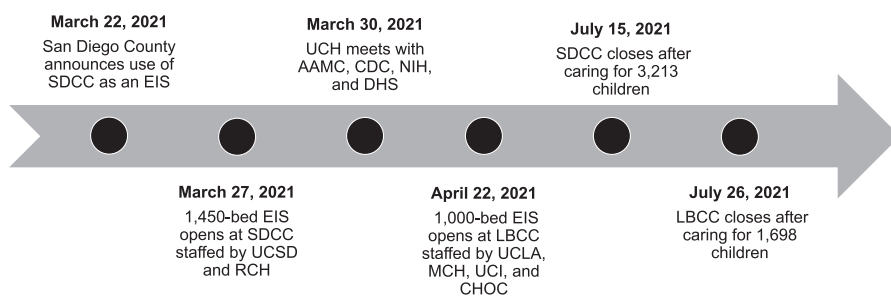


Figure 1 Timeline for the 2 Californian EISs for which UCH mobilized a multidisciplinary team to deliver acute general and specialty pediatric care for unaccompanied children arriving at the southern U.S. border. Abbreviations: EIS, emergency intake site; UCH, University of California Health; SDCC, San Diego Convention Center; UCSD, University of California, San Diego; RCH, Rady's Children's Hospital; AAMC, Association of American Medical Colleges; CDC, Centers for Disease Control and Prevention; NIH, National Institutes of Health; DHS, U.S. Department of Homeland Security; LBCC, Long Beach Convention Center; UCLA, University of California, Los Angeles; MCH, Mattel Children's Hospital; UCI, University of California Irvine; CHOC, Children's Hospital of Orange County.

scaling up effective care. At most UCH centers, like other AHCs, the departmental resources for child health are more limited compared with those for adult health, so bringing multiple institutions together was imperative for accomplishing our collective goal of caring for these children.

EISs and Operations

On March 22, 2021, the mayor and chair of the San Diego County Board of Supervisors announced the federal government’s plans to use the SDCC to temporarily house unaccompanied children. By March 27, 2021, the SDCC was converted to a 1,450-bed EIS, including space for infectious disease isolation.

On April 19, 2021, negotiations were completed between federal agencies and the University of California for a second EIS. On April 22, 2021, the LBCC was converted to a 1,000-bed EIS, with 200 isolation beds. The SDCC and LBCC were 2 of 15 EIS facilities operating across the United States. These facilities were established to provide shelter, medical care, education, and social support for these children until they could be reunited with their family or sponsors or placed in long-term shelters.

Support services for each EIS location were required to be built within 24 to 72 hours of their opening. UCH leveraged internal resources to prepare for the provision of health care services as well as a safe and developmentally appropriate environment for thousands of unaccompanied children at these 2 sites. Child life professionals provided access to exercise, play, and entertainment for the children, including art and pet therapy, while local, state, and federal partners met additional daily needs for the children, including food services, laundry, and security among others.

Multiple operational teams were engaged to focus on legal contracts, finances, human resources, health information management, information technology, recruiting, scheduling, and health care professional orientation. Marketing and media relations ensured internal and external communications of politically sensitive services (such as COVID-19 vaccinations) that reflected UCH’s commitments to public service and the protection of the children’s privacy.

Clinicians and support staff were integrated into large and complex teams at each site (Figure 2). Health teams were led by an incident commander/medical

director who ensured orientation and training was completed and provided a single point of contact for effective communication with federal, state, and local agencies, other University of California sites, and health care professionals. Regular and ongoing communications with the U.S. Public Health Service; CDC; HHS; ORR; FEMA; local health, security, and police departments; ambulance agencies; social workers; case managers; and many other agencies was required.

In addition to the deployment of physicians and advanced practice nurses, UCH pharmacists created on-site pharmacies with essential medications, including vaccines. A radiology suite for performance of plain radiographs and a laboratory for critical testing, including rapid testing of children and staff members for SARS-CoV2, were also created. Accomplishing these tasks rapidly was challenging and UCH operation leads benefitted from the recent system-wide experiences of delivering coordinated clinical services during the COVID-19 pandemic.

UCH teams delivered rapid results for several reasons: the mission was aligned with the values of UCH and

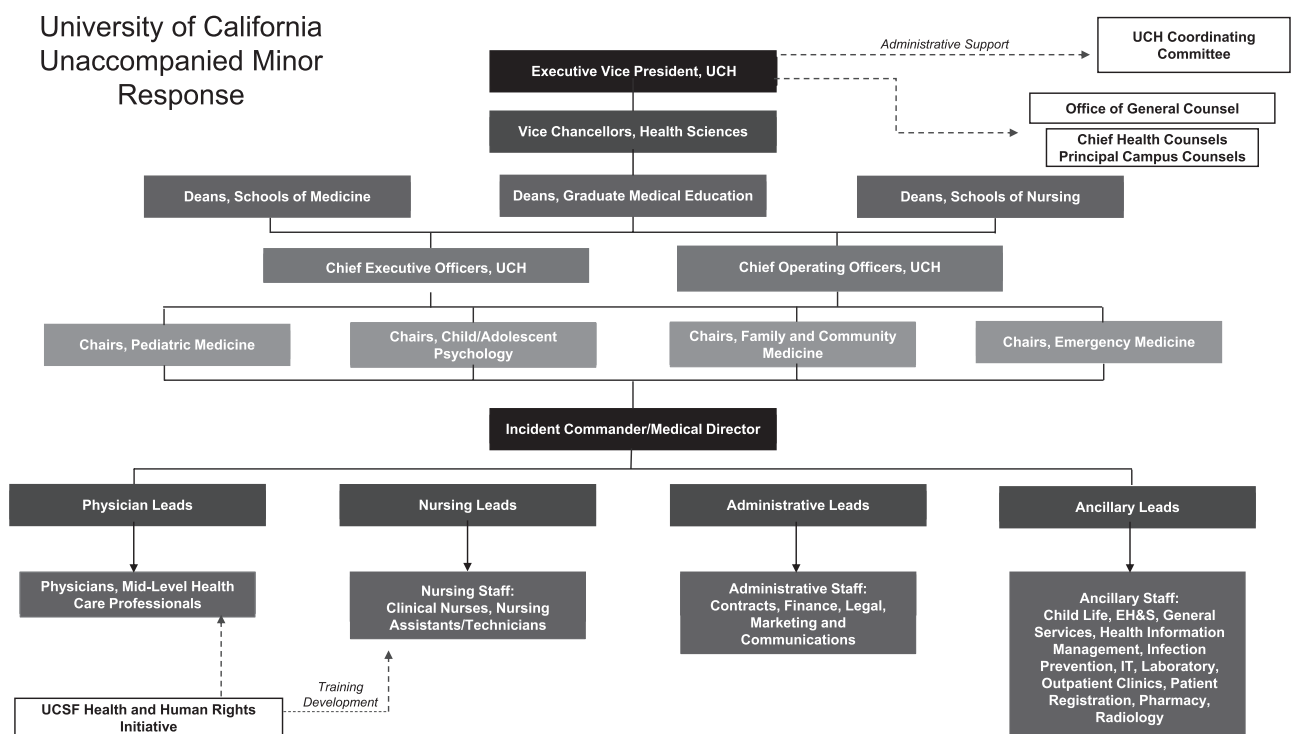


Figure 2 Organizational chart showing the structure of the multidisciplinary team UCH mobilized to deliver acute general and specialty pediatric care for unaccompanied children arriving at the southern U.S. border at 2 Californian EISs. Abbreviations: UCH, University of California Health; EIS, emergency intake site; UCSF, University of California San Francisco; EH&S, environment, health, and safety; IT, information technology.

the partnering children's hospitals; the unwavering support of leadership at both the system and institutional levels ensured personnel and resources were available; the needs of the operation were met by tapping resources across multiple facilities and departments and did not disrupt normal UCH operations; and our teams were well prepared for rapid response because of the recent shared experience of creating a system-wide infrastructure for the COVID-19 pandemic. The response would have been enhanced by preevent coordination and planning with the federal, state, and local agencies charged with disaster preparedness and response.

The SDCC facility closed on July 15, 2021, and the LBCC closed on July 26, 2022. The impact of these operations on the lives of the children and the professionals who cared for them was significant (see, e.g., Figure 3).

Advantages of Local, State, and Federal Agencies Partnering With Academic Health Centers

As local, state, and federal agencies work to improve and refine the disaster response for children, consideration should be given to formalizing partnerships with AHCs. There are a number of benefits that were evident to all partners at the SDCC and LBCC EISs.

Comprehensive health services for children and adolescents

UCH used existing infrastructure to rapidly identify credentialed health care professionals with pediatric expertise for participation. Key partners from Children's Hospital of Orange County, Mattel Children's Hospital, Rady Children's Hospital, and other UCH sites were invited to recommend physicians and other health care professionals, particularly those who could meet the linguistic and cultural needs of the children and who could participate without disrupting patient care or student, resident, or fellow education needs at their respective sites.

On-site medical services were provided 24/7 by general pediatricians and specialists from preventive medicine, emergency medicine, family medicine, child psychiatry, dentistry, ophthalmology, orthopedics, gynecology, obstetrics, nursing, and social work. Depending on the number of new arrivals, it took as many as 25 to 30 physicians and clinical staff per shift to support this work. Overall, 260 physicians, 42 residents and fellows, and 4 nurse practitioners participated as treating clinicians and were supported by hundreds of staff across the 2 EISs.

Workflow processes and teams were designed to minimize the impact on children and provide safe infection control practices. Each site had

dedicated physician leadership, including an incident commander/medical director and associate medical director, to provide 24/7 problem solving for the teams engaged in providing care. The chairs of pediatric medicine who also serve as physicians-in-chief of the participating children's hospitals or chief medical officers across the health systems coordinated multiple aspects of this engagement. Each EIS also had a nursing lead who served as the unit director, helping oversee nursing staff and other aspects of on-site practice. The unit director had immediate access to the incident commander/medical director and administrative leads, allowing for rapid problem solving to address any barriers. Infection prevention and preventive medicine physician representatives made regular visits to assist with acute outbreaks and maintain processes according to local health department and CDC guidelines. Pharmacists, laboratory personnel, child life specialists, x-ray technicians, and individuals responsible for the art and pet therapy programs made key contributions as well. Spanish-to-English and English-to-Spanish interpreters were made available to non-Spanish-speaking personnel.

Unaccompanied children arrived by bus, frequently at night, with each arrival including up to 150 children. Upon arrival, the children, who were often exhausted from the trip, underwent a rapid EHR registration process and screenings for COVID-19 and other emergent health needs. After the screening, children had access to bathing facilities and fresh clothes and were fed and housed. Over the next 24 to 48 hours, each child underwent a complete history and physical examination in the on-site clinic. All females aged 10 years and older underwent a urine screening for pregnancy.

Children received recommended vaccinations, including the measles-mumps-rubella, varicella, hepatitis A, and diphtheria-tetanus-acellular pertussis vaccines. UCH health care professionals advocated for COVID-19 vaccination for eligible adolescents and received approval from HHS to administer these vaccines for those who were eligible. Children aged 16 to 17 years were offered COVID-19

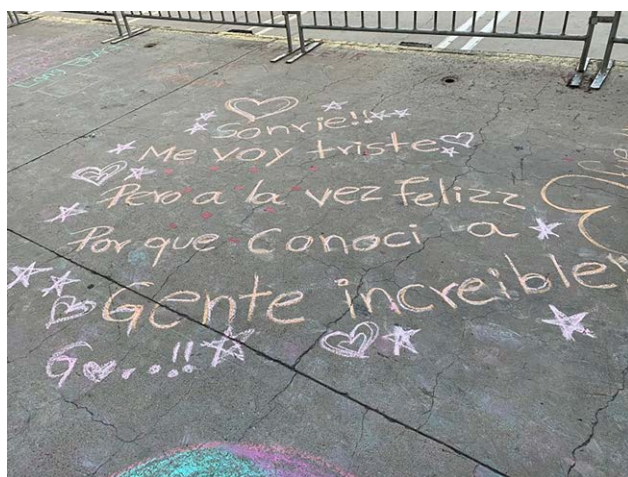


Figure 3 Example message left by an unaccompanied child at one of the 2 Californian emergency intake sites for which the University of California Health mobilized a multidisciplinary team to deliver acute general and specialty pediatric care for unaccompanied children arriving at the southern U.S. border. In English, the message pictured reads, "Smile!! I leave sad, but at the same time happy because I have met incredible people."

vaccinations beginning in late May 2021. ORR authorized COVID-19 vaccine administration for children aged 12 to 15 years on June 10, 2021. After June 10, all eligible children present at the EISs were offered COVID-19 vaccinations.

A 24/7 urgent care clinic was available on-site and UCH telehealth services were available for consultations. These in-house resources minimized the need to transport the children outside of the EISs for services. Overall, <4% of children required transport to other facilities for consultations, emergency care, or hospitalization.

COVID-19 protocols were developed by UCH infection prevention experts in consultation with CDC and local public health authorities. Throughout their stay, all children underwent COVID-19 surveillance testing every 3 days. Children who tested positive for COVID-19 were isolated, generally with siblings per their preference (even if the sibling/s tested negative) for 10 days within the isolation unit. Close contacts of children that were positive on surveillance testing were quarantined as a group in separate units for 7 days and cleared to rejoin the main shelter if they remained COVID-19 negative. All health care workers and support staff underwent similar COVID-19 surveillance testing every 3 days (or every 7 days for fully vaccinated staff). Staff with COVID-19 symptoms were not allowed into the EISs.

Availability of trauma-informed care

All physicians provided trauma-informed care, with the ability to access emergent psychological support services when needed. A trauma-informed approach includes the integration of the child's physical and mental health, which reflects an ongoing commitment to address the potential long-term impacts of trauma experiences.^{7,8} Trauma-informed care recognizes the possibility that immigrant children and families have experienced past or ongoing traumatic situations that may negatively affect their current functioning and response to interventions.³ Postmigration experiences during detention especially challenge a child's mental health.⁴ Children are more likely to suffer adverse mental health consequences when detained in restrictive facilities, compounding negative premigration experiences,

and can be perceived as worse than the adversity experienced before migration.⁵ This informed the work to create a child-friendly and developmentally supportive environment in the EISs.

Psychological first aid (PFA) is an evidence-informed modular approach to helping children, adolescents, adults, and families in the immediate aftermath of traumatic experience and is designed to reduce the initial distress that traumatic events trigger. It fosters short- and long-term adaptive functioning and coping.⁹ PFA was used in the EISs to quickly assess needs and coping skills to help identify individuals at risk for developing more serious symptoms and conditions and reduce the need for additional resources, as all health care professionals had instruction in PFA, using a guide for implementation developed by the National Child Traumatic Stress Network, which is coordinated by UCLA and Duke University.¹⁰

Physicians and other health care professionals were trained in the use of trauma-informed care and PFA through asynchronous education and during orientation to the EISs; both were used in clinical interactions with the children.

Opportunities for continuing and graduate medical education

Graduate medical education directors from UCH sites were engaged in planning the mission of the EISs and preparing for the inclusion of trainees at these sites. Postgraduate trainees were allowed by HHS to be deployed to gain educational experience in immigrant health. They were deployed at both EIS facilities for daytime shifts, where they undertook health assessments, urgent care shifts, care/follow-up of COVID-19-positive or -exposed children, and discharges. Most trainees volunteered for this rotation during their elective rotations or on their days off.

University of California physicians and faculty collaborated to develop an online course titled "Clinical Support for the Unaccompanied Child," which provided foundational knowledge and served as the basis for the learning objectives of the elective rotations. Learning modules topics included the health impacts of migration, a primer on the legal journey of an unaccompanied

child, trauma-informed mental health, and the clinical role and expectations for health care professionals evaluating unaccompanied children. All modules were available online through the University of California Learning System and included evaluations of learner competencies.

One pediatric residency program developed a refugee health elective tip sheet that was provided to all trainees who worked at the EISs and that was regularly updated with lessons learned. Residents and fellows were taught how to practice PFA for unaccompanied children. Trainees from UCH, including individuals from general and specialty pediatric programs, emergency medicine and critical care, infectious diseases, and neonatology, participated. Residents and fellows from family medicine, preventive medicine, emergency medicine, and medicine pediatrics also participated.

Medical and Reunification Outcomes

Over 5 months and across both EISs, a total of 4,911 children aged 3 to 17 years were cared for by UCH, Rady's Children's Hospital, Mattel Children's Hospital, and Children's Hospital of Orange County health care professionals. Summary demographics, medical visits and hospital admissions, and clinical and social outcomes for children are shown in Table 1.

Unaccompanied children were cared for between March and July 2021, at the nadir of the COVID-19 pandemic in California and at the same time as the transition from alpha to delta variant predominance. A total of 782 children at the EISs were diagnosed with COVID-19. With few exceptions, they were diagnosed within 5 days of arrival, reflecting disease acquisition before entering the facility. We saw an extremely low number of secondary COVID-19 cases in children who were placed in the isolation area for the purpose of maintaining the integrity of family units. In terms of disease severity, the overwhelming majority of children with COVID-19 were either asymptomatic or had mild symptoms. One child with COVID-19 required hospitalization and some children with COVID-19 who had preexisting asthma required management with bronchodilators.

Table 1

Summary Demographics, Medical Visits and Hospital Admissions, and Clinical and Social Outcomes for Unaccompanied Children at the LBCC and SDCC EISs, Cared for by UCH Health Care Professionals, March–July 2021^a

Category	Data
Demographics	
Countries of origin	> 95% of children were from Guatemala, Honduras, and El Salvador
Age range	3–17 years old
Gender	<ul style="list-style-type: none"> • LBCC: 75% female • SDCC: 90% female
Medical visits and admissions	
Total children admitted to LBCC and SDCC EISs	4,911
Total urgent care visits delivered in the EISs	10,814
Total emergency department visits	150
Total hospital admissions	25
Clinical and social outcomes	
Most common medical diagnoses (apart from infestation with head lice and scabies)	<ul style="list-style-type: none"> • COVID-19: 782 • Pregnancy: 81 • Varicella: 5 • Hepatitis A: 2
Vaccinations administered	<ul style="list-style-type: none"> • MMR: 4,787 • Hepatitis A: 2,259 • COVID-19 first dose: 1,607 • COVID-19 second dose: 109
Radiology studies in EISs	270
Total children reunified with family or sponsors	3,931

Abbreviations: LBCC, Long Beach Convention Center; SDCC, San Diego Convention Center; EIS, emergency intake site; UCH, University of California Health; MMR, measles–mumps–rubella.

^aSee Figure 1 for the dates of operations of each emergency intake site.

Infestations, including head lice and scabies, were ubiquitous and each child received treatment for these on arrival. Additional conditions are shown in Table 1. Eighty-one females were pregnant. The most common mental health disorders were stress reactions, panic attacks, and anxiety. Hospitalizations were rare (25); conditions requiring hospital admission included severe anxiety, cardiac arrhythmia, and seizures.

Most children (3,931) were reunified with family or sponsors. HHS worked with UCH health care professionals to organize medical hand-offs for all children. All health care professionals receiving children from the EISs, whether in their areas of residence upon reunification or placement at long-term shelters, were contacted and received an electronic discharge summary to ensure continuity of care. Health information provided in the EHR for each child included COVID-19

infection and/or vaccination status, as well as documentation of their history and physical examination, any other diagnoses, and any procedures or treatments provided at the EIS or in UCH ACHs. To our knowledge, SDCC and LBCC were the first EISs to use an EHR for documentation of acute care and to facilitate continuity of care for unaccompanied children.

Lessons Learned

Mobilizing the collective resources of AHCs proved an innovative alternative to individual volunteerism for providing medical care in a humanitarian crisis. Similar to what has been described by the University of Chicago in response to the 2010 Haitian earthquake,¹¹ AHCs have an abundance of human and technical resources that can be rapidly deployed to address complex crises. Human resources included health care professionals and staff with general and specialty health expertise, many of whom also have

cultural and language expertise, necessary to deliver and support critical services. Technical resources included a single EHR; financial resources; legal expertise; processes and protocols to ensure safe, evidence-based services, including trauma-informed care; and mechanisms for referrals to subspecialists. Emotional and social support resources were also available to ensure the well-being and mental health of both children and health care professionals.

Faculty, staff, and trainees were activated by the urgent, shared mission and motivated to provide the best possible care for the children. Although UCH had been severely stressed by the COVID-19 pandemic, system integration was strengthened by the collective work during the pandemic, and UCH was well prepared to respond to another complex emergency. Regular communications from top leadership, including the University of California Office of the President (through the executive vice president for health), deans, and chief executive officers supported the mission. Local leaders, clinicians, and staff readily volunteered their free time to contribute to the work in the EISs without undermining their core commitments to local patient care and education. Outreach to local political leaders and community organizations mobilized generous contributions of resources (such as books, clothing, and toys) for the children. The emergency and rapid response created an *esprit de corps* and infused a sense of cohesion and pride throughout the entire UCH system.

UCH and partner organizations learned many lessons that may be helpful for those who participate in planning similar missions in the future. First, AHCs possess a wealth of human and other resources that can be mobilized effectively and efficiently during a crisis. The alignment of the mission with the values of AHCs supported participation and willingness to extend capacity and share resources for a common purpose. Second, in supporting unaccompanied children, AHC professionals benefit from specific training in the care of immigrant populations and in trauma-informed care, including PFA. Support for the caregivers is as important as support for the patients themselves. Third, the availability of an EHR supported a complete medical record

for each child, communication between health care professionals, and effective discharge planning and continuity of care coordination. Fourth, an infrastructure to support the communication, financial, and legal issues related to the deployment of personnel and resources is critical. Administrative staff play essential roles in supporting health care professionals and ensuring the success of EISs operations. Fifth, the shared purpose of the mission united many health care professionals across different institutions, hospitals, and programs and strengthened our health system for future clinical, education, and research endeavors. Sixth, leadership at all levels is critical for success, and the incident commander/medical director model deployed by UCH AHCs during the COVID-19 pandemic effectively supported this mission. Finally, collaboration and engagement between AHCs and local, state, and federal agencies responsible for disaster preparedness and response is a strategy that can enhance and support the preparedness of the nation for responding to disasters and humanitarian crises.

Our experience demonstrates that health system collaboration and a system-wide response resulted in optimal outcomes for unaccompanied children. Health care professionals also benefitted and many called their participation in the EISs life-changing and felt that it was an honor to provide health care to these children at a crucial time in their lives, thereby bringing hope and opportunities for new beginnings. The capacities of AHCs can and should be aligned and integrated with federal, state, and local plans to better prepare for and respond to the accelerating need to care for those in the wake of disasters and humanitarian crises.

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S.U. Devaskar is distinguished professor of pediatrics, David Geffen School of Medicine at UCLA, executive chair, Department of Pediatrics, UCLA, physician-in-chief, UCLA Mattel Children's Hospital, assistant vice chancellor of children's health, UCLA Health, and executive director, UCLA Children's Discovery and Innovation Institute, Los Angeles, California.

C.K. Cunningham is pediatrician, UCI Health, Orange, chair, Department of Pediatrics, University of California, Irvine, School of Medicine, Irvine, and senior vice president and pediatrician-in-chief, Children's Hospital of Orange County, Orange, California.

R.H. Steinhorn is professor and vice dean for children's clinical services, University of California San Diego, and president of children's specialists of San Diego and senior vice president, Rady Children's Specialists of San Diego, San Diego, California.

C. Haq is clinical professor and chair, Department of Family Medicine, UCI Medical Center, Orange, California.

J. Spisso is president, UCLA Health, chief executive officer, UCLA Hospital System, and associate vice chancellor, UCLA Health Sciences, Los Angeles, California.

W. Dunne was administrative director of emergency preparedness, security, and safety services, UCLA Health, Los Angeles, California, at the time of writing. The author is currently director of emergency management, Penn State Health, Hershey, Pennsylvania.

J.R. Gutierrez is associate clinical professor, Department of Pediatrics, UCSF School of Medicine, co-director of pediatrics, UCSF Health and Human Rights Initiative and the Center of Excellence for Immigrant Child Health and Wellbeing, San Francisco, California.

C. Kivlahan is medical director, UCSF Human Rights Clinic, UCSF Health and Human Rights Initiative, San Francisco, California.

M. Bholat is professor and executive vice-chair, Department of Family Medicine, David Geffen School of Medicine at UCLA, and executive director and co-founder, International Medical Graduate Program, UCLA Health, Los Angeles, California.

S. Barakat is assistant professor, Family Community Medicine, and executive director, UCSF Health and Human Rights Initiative, San Francisco, California.

M.L. de Leon Siantz is professor emeritus, Betty Irene Moore School of Nursing at UC Davis, and founding director, Center for the Advancement of Multicultural Perspectives on Science, Sacramento, California.

S. Romero is program manager, UCSF Health and Human Rights Initiative, San Francisco, California.

C.T. Lefteris is chief executive officer, UCI Health, Orange, California.

S. Gaffney is manager in executive administration, UCLA Medical Center, Los Angeles, California.

J. Deville is clinical professor of pediatrics, Division of Infectious Diseases, David Geffen School of Medicine at UCLA, and UCLA Mattel Children's Hospital, and director, Care-4-Families Clinic, UCLA Health, Los Angeles, California.

C. Lerner is professor of clinical pediatrics and chair in pediatrics, David Geffen School of Medicine at UCLA, Los Angeles, California.

J. Liu is pediatrician, UCLA Health and UCLA Mattel Children's Hospital, Los Angeles, California.

C.L. Kuelbs is clinical professor of pediatrics, UC San Diego School of Medicine, and chief medical information officer, Rady Children's Hospital, San Diego, California.

S. Kukreja is associate medical director and director of quality improvement, Neonatal Intensive Care Unit, Children's Hospital of Orange County, medical director, Newborn Hearing Screening Program, Children's Hospital of Orange County, and Mission Hospital, and specialist in neonatology, Children's Hospital of Orange County, Orange, California.

C. Golden is pediatrician and executive medical director, Primary Care Network, Children's Hospital of Orange County, Orange, California.

Z. Nelson is associate vice president, Finance and Administration, University of California Health, Oakland, California.

K. Elton is systemwide program manager for environment, health, and safety, UC Office of the President, Oakland, California.

C.L. Byington is professor of pediatrics and pediatric infectious diseases, UCSF School of Medicine, San Francisco, and executive vice president, University of California Health, Oakland, California.

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