CHALLENGES CREATED BY THE COVID-19 PANDEMIC: PEDIATRIC EMERGENCY MEDICINE AND DISASTER MANAGEMENT PERSPECTIVES

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Background: The COVID-19 pandemic has presented unique challenges to pediatric emergency medicine (PEM) departments. The purpose of this study was to identify these challenges and ascertain how centers overcame barriers in creating solutions to continue to provide high-quality care and keep their workforce safe during the early pandemic.

Materials/Methods: This is a qualitative study based on semi-structured interviews with physicians in leadership positions who have disaster or emergency management experience. Participants were identified through purposive sampling. Interviews were recorded and transcribed electronically. Themes and codes were extracted from the transcripts by two independent coders. Constant comparison analysis was performed until thematic saturation was achieved. Member-checking was completed to ensure trustworthiness.

Results: 14 PEM-trained physicians participated in this study. Communication, leadership and planning, clinical practice, and personal adaptations were the principal themes identified. Recommendations elicited include: improving communication strategies; increasing emergency department (ED) representation within hospital-wide incident command; preparing for a surge and accepting adult patients; personal protective equipment supply and usage; developing testing strategies; and adaptations individuals made to their practice to keep themselves and their families safe. For a full list of challenges and recommendations, see Table 1.

Conclusions: By sharing COVID-19 experiences and offering solutions to commonly encountered problems, pediatric emergency departments may be better prepared for future pandemics.

Images / Graph / Table

THEME	CHALLENGES	RECOMMENDATIONS
COMMUNICATION		
	Reaching a large department with updates	• Shift huddles with entire ED staff to share new updates • Town hall meetings with leadership • Bidirectional communication between leadership and frontline workers
		• Leaders and administrators be physically present in ED to answer questions early in a pandemic
	Keeping information consistent	• Establish public information officer role early • Establish education group to review CDC updates • Information should only come from incident command
	Large numbers of emails and rapidly changing processes	• Shift use of email to one update email per day • Highlight the newest process revisions within emails • Create internal websites for staff to reference • Create short videos from leadership highlighting new changes
	Traumas and resuscitations	• "Timekeeper" ensures the right people are in the resuscitation and help communicate with consultants • Everyone wears a role tag over their PPE • Video-conference resuscitations via computers or tablets so that outside teams can listen and participate
LEADERSHIP AND PLANNING		
	ED representation within leadership	• Identify ED COVID leader to be on daily command center calls • ED COVID leadership team responsible for summarizing updates
	Pandemic plans and adjusting to new outbreaks	• Create a containment unit • Know your supply chain and have backup vendors • Regularly update emergency operation plans
	Initial preparation	• Use hospital-wide "emergency" drills to test plans and communication structure • Open command center early • Have a surge plan ready even if you do not need it • Reach out to colleagues in other countries or across the US experiencing the pandemic
	Setting up leadership structure	• Establish collaboration across the local healthcare system • Train individuals on how to perform duties in incident command; keep roles consistent • Have clear descriptions of each command role and review them through incident command • Know who your leaders are for different groups and involve them early • Update business continuity plans regularly
	Adjusting to patient volumes and adult patients	• Have a plan to care for adults in emergency operations plan • If no surge, repurpose surge areas for testing and screening purposes • Utilize telehealth to consult on pediatric patients at other EDs
	Managing supply chain	• Use predictive modeling and dashboards to track PPE and other supply • Invest in multiple forms of protection, i.e., PAPRs and N95s • Foster relationships with new vendors or other healthcare institutions to share supplies
CLINICAL PRACTICE		
	Aerosol-generating procedures	• Even if room is not negative pressure, try to change flow to "negative air flow" • Practice airway simulations • Consider PAPR hoods for all intubations
	Testing	• Create in-house testing capabilities early • Do not wait on test results before admitting patients • Have access to multiple testing modalities in case you run out of supplies for one, you have the other • Establish drive-through and community testing sites
	Cohorting patients	• Treat everyone like they are infected • Perform triage in the room if able • Understand asymptomatic patients may have infection and cohorting patients based on symptoms may not be necessary
	PPE	• Early on, institute mandatory masking and eye protection for staff to limit in-hospital spread • Have multiple methods for repurposing N95s • "PPE spotters" to ensure staff are properly donning and doffing • Post videos online that review proper donning and doffing technique • Offer "refresher" training on proper PPE usage during prolonged pandemics
PERSONAL ADAPTATIONS		
	Addressing fear and anxiety	• Be transparent about supplies, testing, protection, and plans to keep staff safe • Make leaders available to address questions • Offer reassurance and lead by example
	Keeping personnel safe and healthy	• Safety monitors to ensure proper PPE use • Remind consultants coming to ED to wear proper PPE • Provide support hotline to staff for information about testing, childcare, mental health, and other needs
	Personal changes	• Use room phones to update patients and families • Use monitors in room so one can check up on vitals from doorway • Rely and resident and fellow evaluations to limit contact • Avoid excess clothing; change scrubs before going home