Do Pediatric and Adult Disaster Victims Differ? A Descriptive Analysis of Clinical Encounters from Four Natural Disaster DMAT Deployments

Katherine A. Gnauck, MD; Kevin E. Nufer, MD; Jonathon M. LaValley, BS; Cameron S. Crandall, MD; Frances W. Craig, MD; Gina B. Wilson-Ramirez, MD

Center for Disaster Medicine, Department of Emergency Medicine, University of New Mexico, Albuquerque, New Mexico USA

Correspondence:
Katherine Gnauck, MD
University of New Mexico
Department of Emergency Medicine
MSC10 5560
1 University of New Mexico
Albuquerque, New Mexico 87131 USA
E-mail: KGnauck@salud.unm.edu

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Abbreviations:
ABC = airway, breathing, and circulation
DMAT = disaster medical assistance team
IQR = interquartile range
NDMS = National Disaster Medical System
PDLS = pediatric disaster life support
PST = Pediatric Subspecialty Team
URI = upper respiratory infection
USPHS = United States Public Health Service

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Abstract

Objectives: The differences between pediatric (≤17 years of age) and adult clinical field encounters were analyzed from four deployments of Disaster Medical Assistance Teams (DMATs).

Methods: A retrospective cohort review of all patients who presented to DMAT field clinics during two hurricanes, one earthquake, and one flood was conducted. Descriptive statistics were used to analyze: (1) age; (2) gender; (3) severity category level; (4) chief complaint; (5) treatments provided; (6) discharge diagnosis; and (7) disposition. Five subsets of pediatric patients were analyzed further.

Results: Of the 2,196 patient encounters reviewed, 643 (29.5%) encounters were pediatric patients. Pediatric patients had a greater number of blank severity category levels than adults. Pediatric patients also were: (1) more likely to present with chief complaints of upper respiratory infections or wounds; (2) less likely to present with musculoskeletal pain or abdominal pain; and (3) equally likely to present with rashes. Pediatric patients were more likely to receive antibiotics, pain medication, and antihistamines, but were equally likely to need treatment for wounds. Dispositions to the hospital were less frequent for pediatric patients than for adults.

Conclusions: Pediatric patients represent a substantial proportion of disaster victims at DMAT field clinics. They often necessitate special care requirements different from their adult counterparts. Pediatric-specific severity category criteria, treatment guidelines, equipment/medication stocks, and provider training are warranted for future DMAT response preparations.

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Introduction

Disaster response planning now is a priority in the US with extensive advocacy to include pediatric-specific preparedness.[1–4] Disaster Medical Assistance Teams (DMATs) are a part of the National Disaster Medical System (NDMS), a federally coordinated public/private partnership. Disaster medical assistant teams work with federal agencies, civilian medical facilities, and state and local emergency response organizations to provide medical assistance to communities affected by disasters. Traditionally, DMAT field clinics have acted as supplemental sites for administering acute/primary health care to adult and pediatric "walking wounded" patients.[2]

Currently, there are two resources for pediatric-specific disaster responses that reflect the importance of pediatric-specific care in disaster situations: (1) pediatric subspecialty teams (PSTs); and (2) pediatric disaster life support (PDLS). Pediatric Subspecialty Teams (PSTs) are specialty DMATs developed in the mid-1990s to serve the special requirements of pediatric disaster victims. At the time of this study, there were two deployable PSTs available on the East Coast of the US and a third was pending on the West Coast.

Most recently, these were active in the response to the disaster that resulted from Hurricane Katrina in 2005.[2] The PDLS training course is a two-day training course for medical, emergency medical services, and disaster professionals. The course provides information on disaster planning, mitigation and response, and addresses the unique needs of children during disasters.[5]

Pediatric patients can comprise 10% of the patients seeking care at field clinics.[6] The importance of DMATs developing their individual capacity to meet the special care requirements of pediatric, disaster victims has been addressed in the literature.[1,2] Presently, there are no uniform, pediatric-specific requirements in regard to DMAT composition or pre-deployment training for non-pediatric prepared specialists. Currently, equipment caches for DMATs contain some pediatric-specific equipment; however, patient encounter forms, care guidelines, dosage charts, and other pediatric-specific components are not considered as important elements of standards of care for use in the field.

Pediatric-specific experiences in disaster response increasingly have been described in the disaster-health literature, and additionally, important lessons have been learned during the recent deployments following Katrina.[2,7] It is important to continue adding to this knowledge base in order to better describe and understand the special care requirements of pediatric disaster victims. To contribute to this goal, experiences with adult and pediatric disaster victims from four DMAT deployments that preceded Hurricane Katrina were studied.

Methods

Study Design

A retrospective cohort review was conducted of the Medical Encounter Forms of all of the patients who presented to DMAT field clinics during: (1) Hurricane Andrew (Florida US, August 1992); (2) Hurricane Iniki (Hawaii US, September 1992); (3) the Northridge Earthquake (California US, January 1994); and (4) the Houston floods of Tropical Storm Allison (Texas US, June 2001). Patients ≤17 years of age were included in the pediatric group.

Data Collection and Processing

All encounter forms from each disaster that were stored at the state DMAT Center were retrieved for this study. Four experienced DMAT physicians conducted the data abstraction using a standardized abstraction form. For questionable cases, the lead physician reviewed the chart and resolved any discrepancies. All data abstracted were entered into an Excel (Microsoft, Inc., Redmond WA) database by the lead physician reviewer. The encounter forms used were from the *National Disaster Medical System/US Public Health Service (NDMS/USPHS) Medical Treatment Report*. Standard, generic scene triage criteria were adapted and used to describe the clinical severity category of each patient that presented to the field clinics. This tool consisted of four severity categories: (1) "green": walking wounded and/or patients with abrasions, contusions, minor lacerations, stable airway, breathing, and circulation (ABCs); (2) "yellow": those in need of definitive medical care, but who were not likely to decompensate rapidly when their care initially is delayed; (3) "red": those with obvious threat to life or limb, often with some alterations in their airway, breathing, and/or circulation (ABCs); and (4) "black": deceased.

Outcome Measures

Patient data abstracted from the Encounter Forms included: (1) age; (2) gender; (3) severity category level; (4) chief complaint; (5) treatments provided; (6) discharge diagnosis; and (7) disposition. Five subsets of pediatric patients were analyzed further. These subsets were defined by the following age categories: (1) <3 months; (2) 3 months to <1 year; (3) 1–4 years; (4) 5–11 years; and (5) 12–17 years.

Data Interpretation

Chi-square (χ^2) analysis was used to define the difference between adult and all patients and the five subsets of pediatric patients. The χ^2 test for trend was used to examine trends within the pediatric subgroups. This study was approved by the University of New Mexico, Human Research and Review Committee.

Results

Combined Disasters

Of the 2,196 patient encounters reviewed, 643 (29.5%) of the patients were classified as pediatric. The median adult age was 39 years (interquartile range (IQR): 29–49 years). The median pediatric age was four years (IQR = 1.3–10.0 years). The male to female ratios (1:1.2) were the same for adult and pediatric patients. Children ≤4 years of age comprised 52% (334/643) of the pediatric patients studied. The pediatric patients consisted of the following subgroups: (1) <3 months: 9.3% (60/643); (2) 3 months to <1 year: 7.6% (49/643); (3) 1–4 years: 34.9% (225/643); (4) 5–11 years: 32.5% (209/643); and (5) 12–17 years: 15.5% (100/643).

The percent of pediatric and adult patients in each severity category for all four disasters combined are listed in Table 1. Pediatric patients were less likely to present in green and yellow severity categories and more likely to present in the red category than were their adult counterparts. Pediatric patients were more likely to have a greater number of undocumented severity levels than did their adult counterparts (odds ratio = 1.96, 95% CI = 1.61–2.39). Documentation rates of severity levels increased significantly with increased group age for pediatric patients (<3 months, (63.3%, 38/60); 3 months to <1 year,(67.3%,33/49); 1–4 years, (33.2%,121/225); 5–11 years, (44.9%,94/209); 12–17 years, (41%,41/100) ($p = 0.0039$, χ^2 test for trend).

Chief Complaints—Chief complaints, discharge diagnoses, treatments, and disposition of pediatric and adult patients for all four disasters combined are listed in Table 2. Pediatric patients were more likely than adults to present with chief complaints of upper respiratory infection (URI), wounds, and rash. Musculoskeletal pain, abdominal pain, and medication refills were more common complaints among the adult patients. All of the pediatric patients had documented (known) chief complaints.

Severity	Pediatrics (n = 643)		Adults (n = 1,553)		OR 95% CI
	Frequency	%	Frequency	%	
Green	349	54	982	63	0.69 (0.57–0.83)
Yellow	39	6	181	12	0.49 (0.34–0.69)
Red	11	2	22	1	1.21 (0.59–2.48)
Black	0	0	0	0	0
Unknown	244	38	368	24	1.96 (0.61–2.39)

Table 1—The frequency of each clinical severity category of all patients who presented to the field hospitals (CI = confidence interval; OR = odds ratio)

Diagnoses—Pediatric patients were more likely than adults to have a discharge diagnosis with upper respiratory infections (URI), otitis, and/or gastroenteritis. The primary pediatric discharge diagnoses by age for categories of "Medical" vs. "Injury"/"Injury-related" and other are illustrated in Figure 1. These diagnoses included: 54% Medical; 34% Injury/Injury-related; and 13% other (jaw pain, cerumen in ears, blood pressure check, etc). An unknown primary diagnosis (documentation blank) occurred for 21% (135/643) of pediatric patients. One 14-year-old male with an injury diagnosis of "closed head injury" and severity category red, required intubation and stabilization prior to being transferred to the hospital.

Treatments—Pediatric patients were more likely to receive antibiotics, pain medications, and antihistamines when compared to adult patients, and they were equally likely as adults to need wound care. Wound care included irrigation, suturing, delayed closures, and bandaging. Tetanus prophylaxis was more likely to be needed among adult patients.

Disposition—Disposition to the hospital was less likely for pediatric patients than for the adults. The rate of those who "left without being seen" was greater for the adults. The vast majority of children (92%) were discharged after their initial encounter (588/643). In the pediatric group, there was a significant trend that referral to the hospital decreased as age increased (<3 months, (21.7%, 13/60); 3 months to <1 year, (10.2%, 5/49); 1–4 years, (6.2%, 14/225); 5–11 years, (5.3%, 11/209); 12–17 years, (8%, 8/100) ($p = 0.0072$, χ^2 test for trend). There were no missing dispositions for pediatric patients.

Individual Disasters

Pediatric and adult data relative to the individual disasters are listed in Table 3. The percentages of pediatric patients treated during each disaster were: (1) Hurricane Andrew: 28.5% (196/687); (2) Hurricane Iniki: 18.3% (62/338); (3) Northridge Earthquake: 43.4% (259/596); and (4) Tropical Storm Allison: 21.9% (126/575).

Chief Complaints—Chief complaints were similar during each disaster and reflected the same pattern observed in the combined disasters—URI symptoms, wounds, and rash being more likely in the pediatric patients than for their adult counterpart.

Diagnoses—Diagnoses varied among disaster sites. Wounds were more frequent in pediatric patients at Iniki and Allison. Stress was more frequent for pediatric patients than for adults at Andrew, Iniki, and Allison. Gastroenteritis was more frequent among pediatric patients at Andrew, Northridge, and Allison.

Treatments—Treatments showed that pain medication was more likely to be administered for pediatric patients than for adults in all four disasters. Pediatric patients were more likely to receive antibiotic medications than were adults in three of the four disaster sites. Wound care was more likely received by pediatric victims of Iniki, Northridge, and Allison. Antihistamines were more likely administered to pediatric patients at Northridge and Allison.

DMAT Composition

The composition of the DMATs for the individual disaster sites is summarized in Table 4. There was an average of 47 team members deployed at each site (range: 31–68). The average number of physicians was seven per site, (range: 5–9); nurses, nine per site (range: 3–14); and paramedics, 21 per site (range: 9–42). The average ratio of physicians:nurses:paramedics was 1:1.2:2.8. The average number of days which the whole DMAT was deployed for the four disasters was nine days (range: 7–11). An average of 549 patients were seen at each site (range: 338–687). The ratio of team members to patients seen at each site was: Andrew 1:10; Iniki 1:7.5; Northridge 1:13; Tropical Storm Allison 1:18.5.

Discussion

This study addresses the current limitation of knowledge about the differences between pediatric and adult patient-care needs in disaster settings.

The results indicate that children, especially young children <4 years of age, represent an important proportion of

	Pediatric (n = 643) (%)	Adult (n = 1,553) (%)	OR (95% CI)
Chief Complaint			
Upper-respiratory infection symptoms	221 (34.4)	444 (28.6)	2.31 (2.07–2.59)
Wounds	77 (11.9)	156 (10)	1.21 (0.91–1.62)
Abdominal pain	10 (1.0)	62 (4.0)	0.38 (0.19–0.75)
Rash	23 (3.6)	51 (3.3)	1.09 (0.67–1.80)
Musculoskeletal	37 (5.8)	195 (12.6)	0.43 (0.29–0.61)
Medication refill	12 (1.9)	84 (5.4)	0.33 (0.18–0.61)
Other	263 (40.9)	56.1 (36.1)	2.31 (2.07–2.59)
Missing	0	0	--
Diagnoses			
Wound	34 (6.7)	12 (9.9)	0.66 (0.45–0.96)
Otitis media, external	61 (16.9)	86 (4.9)	2.78 (2.27–2.50)
Upper-respiratory infection	65 (12.8)	138 (11.3)	1.15 (0.84–1.57)
Gastroenteritis	26 (5.1)	21 (1.7)	3.57 (1.65–7.75)
Musculoskeletal	8 (1.6)	84 (6.1)	0.22 (0.10–0.46)
Stress	58 (11.4)	127 (10.4)	1.11 (0.80–1.54)
Other	256 (50.4)	645 (52.8)	0.93 (0.77–1.12)
Missing	135 (21)	331 (21.3)	0.98 (0.78–1.23)
Treatments			
Antibiotics	141 (24.2)	240 (18.8)	1.38 (1.09–1.75)
Pain medication	121 (20.8)	213 (16.6)	1.31 (1.03–1.69)
Wound care	86 (14.8)	201 (15.7)	0.93 (0.71–1.22)
Tetanus vaccine	62 (10.7)	272 (21.3)	0.44 (0.33–0.59)
Antihistamine	35 (6.0)	66 (5.2)	1.18 (0.77–1.79)
None	137 (23.5)	288 (22.5)	1.06 (0.84–1.34)
Missing	61 (9.5)	273 (17.6)	0.43 (0.32–0.58)
Disposition			
Home	588 (91.4)	1,302 (86.5)	1.57 (1.14–2.15)
Hospital	51 (7.9)	174 (11.6)	0.65 (0.48–0.91)
Left without being seen	4 (0.7)	30 (1.9)	0.31 (0.11–0.83)
Missing	0	0	--

Table 2—Chief complaints, diagnoses, treatments, and dispositions (CI = confidence interval; OR = odds ratio)

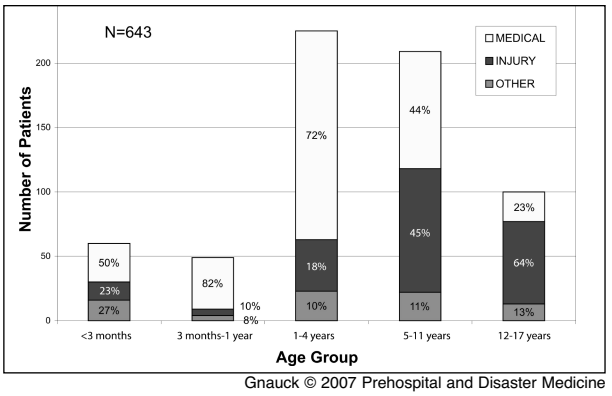

Figure 1—Pediatric diagnosis

victims of disasters caused by natural hazards. Pediatric patients represented almost one-third of all patients seen, and very young children, ≤5 years of age, represented 15% of all patients seen. This is a greater proportion of young patients than the 9.5% reported previously from an unrelated DMAT field hospital after Hurricane Iniki.[6] It is unclear why this unrelated DMAT field clinic that responded to one of the same disasters that this report documented had a much lower percentage of pediatric patients. This difference may reflect the different demographics of each area. Perhaps this clinic was located in closer proximity to an existing healthcare facility with pediatric capabilities, or maybe this DMAT site was situated in a geographic region with an older general population. Since the large percentage of pediatric patients was consistent across all four sites, the need for specific pediatric disaster preparedness at DMAT field hospitals is reinforced.

The preponderance of females to males treated may indicate that males are unable to seek care at a clinic because they participate in the repair and rebuilding efforts. It is unclear why this ratio also was noted in pediatric patients.

The DMAT team composition varied across the four disasters. The team and site response reflected the number of patients estimated to be treated at the disaster site. The average number of days of deployment reflected a standard deployment time of ≤2 weeks per team member. Across scenarios, the variation in the ratio of team members providing care was greatest for nurses and paramedics. The similarity in the average number of patients seen at each site versus the ratio of team members to patients may indicate that smaller sites were as efficient as the larger sites. In general, the team compositions were similar to guideline recommendations and team compositions of other DMAT field experiences from previous studies.[8]

The implications for DMAT planning and preparation can be inferred on several levels. Based on the preponderance of adults and pediatric patients classified as green severity levels in this study, DMATs should anticipate the needs for this primary care level. However, the occasional unstable adult or pediatric patient also must be anticipated (e.g., the 14-year-old with a head injury who required intubation and stabilization prior to transfer).

The incorporation of a pediatric-specific field severity category tool may be an important step for DMAT disaster preparedness. An approach has been reported in Jump START.[9] Results show that there was an increased lack of severity category data documentation for pediatric patients, especially very young children, compared to adults. This was not observed for the documentation among pediatric patients in "chief complaints", "discharge diagnoses", or "disposition". The standard severity category tool is used immediately after an event for the on-site triage of adults. The lack of documentation of severity in this study implies that this tool is unsuitable for pediatric patients and argues for the importance of a pediatric-specific field severity tool.

One-third of all the pediatric diagnoses were grouped into an injury or injury-related category, which was similar to that seen in a pediatric emergency department following Hurricane Andrew.[10] In the field, the DMATs should focus on preventing injuries during the recovery period. To accomplish this, more details and a thorough understanding of mechanisms of injury are needed.

There was a striking amount of pediatric gastroenteritis diagnosed during the aftermath of Hurricane Andrew, the Northridge Earthquake, and Tropical Storm Allison. Damage to the infrastructure of the water and sewer systems may lead to an impaired water supply. This can prevent DMATs providing treatment (e.g., the use of rehydration solutions, intravenous rehydration resources) and prevention (e.g., the need for early support from outside of bottled water supplies and portable toilet systems).

Currently, DMAT members are not required to have any training in pediatrics, including Pediatric Advanced Life Support (PALS) or PDLS, yet one-third of the patients in this study were children, and at least one pediatric patient required advanced life support.

Lastly, the treatment data are important in planning a cache of medical supplies. A considerable proportion of pediatric patients received antibiotics, pain medications, and antihistamines. Appropriate pediatric preparations (suspensions) and dosage guidelines should be available. Fewer tetanus prophylaxes may be needed for the pediatric group than for adults if the majority are school age and have been immunized previously.

Limitations

The limitations in this study are those inherent in chart review studies, including: (1) missing data; (2) variability of initial data abstraction; and (3) the inability to retrieve original encounter forms to resolve missing data issues. Additionally, patient age was not blinded. A major limitation was due to the dispersed DMAT field clinic locations at each disaster scene. No comparison of pre-event population demographics was performed.

Incomplete data was a major factor for both patient types in this study. Some omissions are inherent in the often chaotic field clinic environment; however, certain pediatric-specific tools would enhance information gathered in the field. An example of this was in the lack of severity category data for the pediatric patients and the development and implementation of a pediatric-specific severity category tool would be important.

The NDMS/USPHS forms used were generic in nature. The development and implementation of pediatric-

	Hurricane Andrew (n = 687)					Hurricane Iniki (n = 338)					Northridge Earthquake (n = 596)					Tropical Storm Allison (n = 575)				
	Pediatric (n = 196)		Adult (n = 491)		OR (95% CI)	Pediatric (n = 62)		Adult (n = 276)		OR (95% CI)	Pediatric (n = 259)		Adult (n = 337)		OR (95% CI)	Pediatric (n = 126)		Pediatric (n = 449)		OR (95% CI)
Chief Complaint	n	%	n	%		n	%	n	%		n	%	n	%		n	%	n	%	
URI Smptoms	71	36.22	145	29.5	1.35 (0.95-1.92)	34	54.8	141	51.1	1.16 (0.97-2.02)	79	30.5	59	17.51	2.07 (1.41-3.04)	37	29.4	99	22.0	1.47 (0.94-2.29)
Wounds	22	11.22	35	7.1	1.65 (0.93-2.89)	7	11.3	21	7.6	1.54 (0.62-3.81)	23	8.9	17	5.04	1.83 (0.96-3.51)	25	19.8	83	18.5	1.09 (0.66-1.79)
Abdominal Pain	3	1.53	24	4.9	0.3 (0.09-1.01)	1	1.6	12	4.3	0.37 (0.04-2.83)	2	0.8	10	2.97	0.254 (0.05-1.17)	4	3.2	16	3.6	0.89 (0.29-2.70)
Rash	7	3.57	5	1.0	3.6 (1.13-11.5)	1	1.6	6	2.2	0.74 (0.09-1.03)	3	1.2	1	0.30	3.94 (0.41-38.1)	12	9.5	39	8.7	1.10 (0.56-2.18)
Musculoskeletal	8	4.08	0	0.0	0.99 (0.98-1.12)	5	8.1	48	17.4	0.41 (0.15-1.09)	6	2.3	44	13.06	0.32 (0.09-1.14)	18	14.3	103	22.9	0.26 (0.12-0.58)
Med refill	3	1.53	49	10.0	0.14 (0.043-0.46)	0	0.0	10	3.6	0.90 (0.94-0.99)	9	3.5	19	5.64	0.60 (0.27-1.35)	0	0.0	6	1.3	0.99 (0.98-1.0)
Other/Unknown	82	41.84	233	47.5		14	22.6	38	13.8		137	52.9	187	55.49		30	23.8	103	22.9	
Missing	0	0.00	0	0.00		0	0.00	0	0.00		0	0.00	0	0.00		0	0.00	0	0.00	
Diagnoses																				
Wounds	7	4.58	23	6.1	0.74 (0.32-1.72)	3	5.4	13	5.9	1.58 (0.56-4.45)	2	1.1	8	3.69	0.29 (0.07-1.19)	22	19.1	77	19.1	1.00 (0.59-1.69)
Ottis med/ext	22	14.38	50	13.2	1.10 (0.64-1.89)	2	3.6	10	4.5	0.78 (0.19-3.21)	29	15.8	13	5.99	2.94 (1.49-5.78)	8	7.0	13	3.2	2.25 (0.92-5.45)
URI	19	12.42	49	12.9	0.95 (0.54-1.67)	10	17.9	49	22.1	0.77 (0.37-1.61)	29	15.8	26	11.98	1.37 (0.78-2.41)	7	6.1	14	3.5	1.81 (0.73-4.47)
Gastrointeritis	4	2.61	4	1.1	2.52 (0.67-9.42)	1	1.8	0	0.0		5	2.7	1	0.46	6.03 (0.98-37.09)	16	13.9	16	4.0	3.92 (1.91-8.03)
Muscluoskeletal	2	1.31	17	4.5	0.27 (0.07-1.06)	1	1.8	5	2.3	0.79 (0.12-4.92)	2	1.1	18	8.29	0.12 (0.03-0.46)	3	2.6	44	10.9	0.21 (0.07-0.66)
Stress	2	1.31	4	1.1	1.24 (0.26-5.89)	7	12.5	15	6.8	1.97 (0.78-4.97)	15	8.2	21	9.68	0.82 (0.41-1.64)	34	29.6	87	21.5	1.53 (0.96-2.43)
Other	97	63.40	232	61.2		32	57.1	130	58.6		102	55.4	130	59.91		25	21.7	153	37.9	
Missing	43	21.94	112	22.8		6	9.7	54	19.6		75	29.0	120	35.61		11	8.7	45	10.0	
Treatments																				
Antibiotics	49	25.00	76	15.5	1.81 (1.22-2.72)	12	19.4	44	15.9	0.79 (0.39-1.59)	57	22.0	52	15.40	1.55 (1.02-2.34)	23	18.3	68	15.1	1.25 (0.75-2.09)
Pain Medication	33	16.80	67	13.6	1.28 (0.81-2.01)	12	19.4	38	13.8	1.503 (0.74-3.047)	51	19.7	46	13.60	1.55 (1.00-2.39)	25	19.8	62	13.3	1.54 (0.92-2.57)
Wound Care	20	10.20	63	12.8	0.77 (0.45-1.31)	11	17.4	35	12.7	1.48 (0.72-3.08)	37	14.3	43	12.80	1.14 (0.71-1.82)	18	14.3	60	13.3	1.08 (0.61-1.89)
Tetanus Vaccine	11	5.60	88	17.9	0.27 (0.14-0.51)	5	8.06	49	17.8	0.40 (0.16-1.03)	29	11.2	58	17.20	0.60 (0.38-0.98)	17	13.5	77	17.1	0.43 (0.75-1.32)
Antihistimines	12	6.10	20	4.1	0.7 (1.54-3.16)	2	3.22	11	3.9	0.80 (0.019-3.24)	14	5.4	14	4.20	1.31 (0.62-2.78)	7	5.6	21	4.6	1.19 (0.50-2.82)
None	71	36.20	177	36.0	1.43 (0.99-2.04)	20	32.2	99	35.9	0.85 (0.47-1.52)	71	27.4	124	36.80	0.64 (0.46-0.92)	36	28.6	161	35.8	0.72 (0.47-1.09)
Disposition																				
Home	174	88.78	4	87.8	1.11 (0.66-1.84)	58	93.5	247	89.5	1.70 (0.61-4.78)	241	93.1	261	77.45	3.89 (2.28-6.67)	115	91.3	404	90.0	1.16 (0.59-2.29)
Hospital	20	10.20	55	11.2	0.90 (0.53-1.54)	4	6.5	27	9.8	0.63 (0.23-1.79)	17	6.6	60	17.80	0.32 (0.19-0.57)	10	7.9	38	8.5	0.93 (0.46-1.90)
LWBS	2	1.02	5	1.0	1.00 (0.22-4.51)	0	0.0	2	0.7		1	0.4	16	4.75	0.07 (0.01-0.42)	1	0.8	7	1.6	0.51 (0.08-2.94)

Table 3—Individual disasters, chief complaints, diagnoses, treatments, and dispositions (CI = confidence interval; LWBS = left without being seen; OR = odds ratio; URI = upper-respiratory infection)

Disaster Location	Team Composition
Andrew: Total of 68 team members deployed Patients Seen: 687 Dates Deployed: 26 August 1992–05 September 1992 Days Deployed: 10 Shifts Worked: 12 hours/8 hours some days Work Sites: Outreach and multiple other locations: Dade County Municipal Building	Physicians: 8 Nurses: 14 Paramedics: 42 Logistics: 2 Communications: 2
Iniki: Total of 45 team members deployed Patients Seen: 338 Dates Deployed: 19 September 1992–26 September 1992 Days Deployed: 7 Shifts Worked: 12-hour days Work Sites: Outreach and multiple other locations: Prince Ville, Oahu, Kalaheo	Physicians: 9 Nurses: 7 Paramedics: 15 Communications: 6 Field Administration: 2 Emergency Technicians/Suture Technicians: 6
Northridge: Total of 44 team members deployed Patients Seen: 596 Dates Deployed: 17 January 1994–26 January 1994 Days Deployed: 11 Shifts Worked: 8-hour days Work Sites: Multiple locations: Canoga Park, Winnetka Center, Lanark Recreation Center, Reseda Recreation Center, Runney-Maede Park, West Park, Grande Hills High School	Physicians: 5 Nurses: 10 Paramedics: 16 Home Base Administration: 5 Communications: 8
Houston/Tropical Storm Allison: Total of 31 team members deployed Patients Seen: 575 Dates Deployed: 10 June 2001–18 June 2001 Days Deployed: 8 Shifts Worked: 12 hours/8 hours some days Work Sites: Astrodome or Astrohall	Physicians: 6 Nurses: 3 Paramedics: 9 Logistics: 3 Pharmacists: 2 Mental Health: 8

Table 4—Demographics of disaster medical assistance teams

specific aspects of the encounter form would enable more information to be gathered for further evaluation and understanding of pediatric special care needs. It was impossible to date the encounters, which would have enabled the placement of each encounter in a timeframe relative to the disaster impact and allow for comparison with already published data. In regard to DMAT team composition, information regarding the pediatric-specific training of physicians, nurses, and paramedics was lacking.

Conclusions

Pediatric patients represent an important proportion of disaster victims. Pediatric patients have special care requirements at DMAT field clinics, as reflected in differences from their adult counterparts in chief complaints, treatment, discharge diagnosis, and disposition. Applying adult scene triage criteria to the pediatric patient presenting to the field clinic may result in a significant amount of missing field severity category data. Further studies of pediatric needs and differences in the pediatric vs. adult disaster victims are needed. Specific pediatric training, field severity category criteria, treatment guidelines, and equipment/medication stocks may be warranted for future DMAT response preparations.

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