

Urgent Healthcare Utilization by Relocated Northern Israeli Residents During the Summer 2006 War

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Abstract

Objectives: During summer 2006, a Jerusalem area urgent care system saw increased patient flow from northern Israel. The study goal was to quantify and characterize these visits to learn more about medical needs of displaced people and the role of urgent care during wartime.

Methods: TEREM is a group of privately owned free-standing emergent care clinics. TEREM's central clinic is open 24 hours/day, 365 days/year. Four other sites are open evening and weekend hours. TEREM uses a proprietary computer system to register and clinically manage all visits. We undertook a retrospective observational study to characterize the use of the clinic system by patients from affected areas during war time as compared to that of local residents in an area not under attack. The computerized data from July 12 to August 21, 2006 of visits from northern addresses were compared to all others for demographics and type of diagnosis.

Results: TEREM conducted 1049 visits for 938 northern patients and 16,293 visits from non-northerners during the study period. Northerners represented 6.0% of all visits; a ten-fold increase compared to the same time period in both 2004 and 2005. Overall age distribution was similar to that of other patients, but young adult males were underrepresented. Although rates of specific diagnoses were generally similar, northerners were more likely to have anxiety (2.1% vs. 0.4%) and less likely to have fractures (3.0% vs. 5.5%). Fractures were particularly underrepresented in northerners under age 18 (3.3% vs. 8.1%).

Conclusions: Urgent care appears to have served an important function in providing medical care for displaced individuals during the war. A small but significantly elevated percentage of northerners were diagnosed with anxiety, suggesting that some with psychological distress also sought help in this setting.

MeSH Words: Urgent, Immediate, Healthcare, Utilization, War

Introduction

During the war between Israel and the Hizbullah forces in Lebanon from July 12 through August 14th 2006, nearly one third of the Israeli population or about 2 million people were exposed to direct threat of missile attack. Three thousand nine hundred and seventy

rockets landed in Israel, 901 of them in urban areas, leading to forty-three civilian deaths. Four thousand two hundred and sixty four civilians are known to have been treated in hospitals for injuries associated with the war. Of these, 1388 were lightly wounded, 68 were moderately wounded and 33 were seriously wounded. Another 2,733 patients were treated

for “shock” and/or “anxiety.” Six thousand residences were directly hit and more than one million people were forced to live in shelters [1].

Armed conflicts lead to both direct and indirect health consequences for affected populations. Indirect effects include social disruption, increased rates of infectious diseases, malnutrition, and exacerbation of chronic disease [2,3]. Conditions of war such as widespread bombing and deliberate targeting and damaging of health facilities reduce access to even basic healthcare for many [4]. At the same time, war conditions may impact on need for medical services. Levav and colleagues found, for example, that there was an overall increase in visits to general medical practitioners in the Jerusalem area during the second Intifada [5].

Research shows that adverse health effects of war may be particularly pronounced in geographically displaced populations [6,7]. The war between Israel and Lebanon led to massive relocations on both sides of the border. During the war an estimated 300,000 residents of northern Israel fled their homes to avoid rocket attacks [1]. Most left independently, many of them to central Israel. Although details about conditions for relocated Israelis have not been systematically reported, displaced individuals obtained a wide range of living arrangements including staying with relatives or friends, in schools, community centers or other public dwellings, or in some circumstances hotel rooms or a makeshift “vacation community” (in Nitzanim) made available for these individuals.

A particular concern for displaced individuals is access to medical care. Lack of access to medical care may increase vulnerability to a variety of adverse health effects, including spread of infectious disease [3] and psychological sequelae of war [8]. Telephone polls conducted in northern Israel during the 2006 war by Haaretz-Dialog found that 23-29% of respondents reported they could not get needed healthcare because they could not leave shelters or home, because clinics were closed, or they could not get a doctor’s appointment [9]. However, little is known about healthcare utilization among displaced northern Israelis.

Free standing emergency facilities (“mokdim”) exist throughout Israel and the Israeli health

funds (HMOs) encourage their use in lieu of hospital based emergency departments [10].

This use is also assured by National Health Insurance Law [11]. Most such clinics are open evening and weekend hours. A co-payment is generally required but there is no problem using their services even if one has previously seen another physician, something that is penalized or prohibited when done in a clinic setting. It was thus logical to assume that this might be a source of care used by displaced individuals. We sought to study the medical care given and for what medical needs. Understanding types of diagnoses could help in planning for needs of displaced persons in Israel and other countries during wartime. This information is also crucial to understanding the role that urgent care may serve in providing health care when usual channels of medical care are interrupted or not accessible. TEREM, a privately owned group of free standing emergency facilities for which all visits are carefully tracked through a centralized computer system seemed an appropriate place to undertake such a study.

Methods

Setting

Founded in 1989, TEREM is a privately owned company that establishes and manages freestanding emergent care clinics. TEREM’s central clinic, located near the entrance to Jerusalem, is open 24 hours per day, 365 days per year. Four other sites in the area are open evening and weekend hours. All 5 sites provide on-site radiology and laboratory services during all hours of operation. In 2005, TEREM had a total of 140,778 visits to all of its branches combined. TEREM uses a proprietary computer system (developed wholly in house) to register, clinically manage and administer all visits to these clinics.

Study Period

During the war itself, from the first attack in July 12 to the formal cease fire of August 14th, the TEREM clinics saw 985 visits for individuals from northern Israel. During the next week (August 15th to 21st), another 64 northerner visits took place, indicating that many relocated individuals had not yet returned to their homes in

the north. The following days showed a substantial decrease in numbers (only an additional 26 visits until August 31). Therefore, the study period was defined as the time frame from July 12 to August 21, 2006.

Definitions

Using the centralized database, we identified visits for patients whose reported residence was in an area which was under direct rocket threat. These individuals were classified as northerners and were assumed to be patients relocated due to the war. It is possible that some individuals in areas such as Tel Aviv, which were said by the media to be threatened with attack, may have relocated for fear of attack, but we expected this number to be small. We selected out the northern sample from the total sample of patients seen during the July 12 to August 21 time period. The remaining patients were the other or non-northern sample. Comparisons were conducted using de-identified aggregate samples. The Helsinki commission of Sheba Hospital, Tel Hashomer, approved all procedures.

Data Analysis

Comparisons of northerners and others were conducted using t-tests for continuous data and chi square tests for categorical data. All tests were two-tailed. P was set at .05 for significance.

Results

Frequency of Visits

Between July 12 and August 21 a total of 1049 visits were conducted at TEREM for a total of 938 patients from northern Israel. This reflects 6.0% of (17,342) total visits to TEREM during this time period. Individuals from the North resided in over 100 different cities, villages, and kibbutzim located in northern Israel. A summary of number of all visits including major cities and sectors is provided in Table 1. These visits occurred at all five TEREM clinics with 679 presenting to the main branch in the Romema neighborhood of Jerusalem, 189 presenting to Modiin, 63 presenting to Beit Shemesh, 62 to the Southern Jerusalem Clinic, and 56 to Maaleh Adumim. Patients were not asked specifically if they had relocated due to the war. We therefore sought to determine to what degree the number

of visits reflected an increase from usual patterns of northerner visits that might otherwise occur due to travel or recent relocations. We compared this period in 2006 with the same calendar period in years 2004 and 2005. In 2004 there were 90 visits from individuals from these northern locations comprising 0.67 percent of all visits. In 2005 there were 93 visits comprising 0.60 percent of TEREM visits. Thus the visits in 2006 reflect a tenfold increase. Considering also that many people curtailed leisure travel plans during the war, it is likely that the vast majority of northern patients seen during this 2006 period had relocated due to the war.

Table 1. Location of Residence for Northern Patients

Area	# of Visits
Haifa	270
Tzefat	111
Nahariya	96
Tiberias	73
Carmiel	59
Kiryat Shemona	57
Acco	43
Maalot	30
Hadera	11
Natzeret	8
Metula	5
Other Kiryot*	151
(Other) Galil	113
Golan	11
Bet Shean	9
Afula	1
Caesaria	1
Total	1049

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Demographic Features

Visits for northerners were 51.5% female and 48.5% male. This gender distribution did not differ significantly from that of other patients (48.9% female 51.1% male; $X^2=2.5$; $p=0.11$). Mean age for northern patients was 25.92 (SD=23.4) as compared to mean age of 24.79 (SD=21.16) for other patients. These means do not differ significantly ($t=1.66$; $df=17,340$; $p=.096$). Age of treated patients from the north ranged from two months to 92.5 years. Table 2 shows age distribution of patients from the north and other patients during this time period. As shown, age group patterns were generally similar. However, northerners had a slightly

Table 2. Number of Visits by Age of Patient for Northern Israel and Others

Age	Visits for Northerners	Percent of all Northerners	Others (percent of all)	Chi square
0≤2	122	12%	11%	NS
2≤5	113	11%	11%	NS
5≤10	151	14%	11%	12.2**
10≤18	133	13%	15%	5.0*
18≤30	143	14%	17%	7.2*
30≤40	118	11%	12%	NS
40≤50	80	8%	9%	NS
50≤60	71	7%	7%	NS
60≤70	57	5%	4%	NS
70≤80	36	3%	3%	NS
80≤90	21	2%	1%	NS
>90	4	0%	0%	NS
Total	1049			

* p<.01

**p<.001

higher proportion of visits for younger children and a slightly lower proportion of visits for older children and teens. Among young adults (18-30) women had an equal proportion of visits across both groups (both 8.8%). However, there were fewer visits for young men from the north as compared to other patients (4.9% vs. 8.0%; $X^2=13.4$; $p<.001$).

Diagnoses

Categories for most common diagnoses are presented in Table 3 for northerners and other patients. As shown, proportions of patients in most common categories are similar across the two groups. Exceptions were trauma, which comprised 10.5% of northern visits compared to 13.7% of other visits ($X^2=9.1$; $p<.01$), fractures, which comprised 3.0% of northern visits compared to 5.5% of other visits ($X^2=14.6$; $p<.001$) and cardiovascular, which comprised 5.3% of northern visits and 3.2% of other ($X^2=15.0$; $p<.001$). The difference in fractures was due primarily to a difference for individuals under age 18. Among northerners only 3.3% of visits for individuals under age 18 were for fractures compared to 8.1% of visits for minors among other patients ($X^2=15.0$; $p<.001$). Psychological diagnoses, all which were categorized as anxiety, were significantly more common among northerners (2.1% vs. 0.4%; $X^2=62.5$; $p<.0001$).

Time of Visit

Northerners were more likely than other patients to come for visits during daytime hours (08:00 to 16:59). Thirty nine percent of northern visits (N=413) as compared to 33% of other visits took place during regular daytime hours ($X^2=18.4$; $p<.001$). Four hundred and sixteen (40%) of northern visits took place in evening hours (17:00 to 21:59), roughly equivalent to the number of other visits during these hours (40%). Northerners had a lower percentage of overnight visits (22:00 to 7:59) compared to other patients (21% vs.27%; $X^2=19.2$; $p<.001$).

Discharge

The vast majority of patients were discharged to home. For northern visits, 972 (92.7%) resulted in discharge to home, 4 (0.4%) were referred to TEREM for follow-up visit, 65 (6.2%) were discharged to an emergency department, and eight (0.8%) were sent by ambulance to the emergency department. These rates were similar to those for other patients: 91.7% to home, 0.4% for follow-up, 7.1% to emergency room, and 0.8% sent by ambulance to the emergency room.

Repeat Visits

Eight hundred and fifty nine northerners (92%) and 13,940 (93%) of other patients had one visit during this time period. Sixty (6.4%) of northerners 843 (5.6%) of other patients had two

Table 3. Rates of Visits for Most Common Diagnoses for Northerners and for Others

Group of diagnoses	Non-Northerners		Northerners	
	N	%	N	%
Infectious disease	4101	22.3%	275	23.2%
Trauma	2519	13.7%	125	10.5%
Nonspecific illness	2181	11.8%	151	12.7%
Laceration	1438	7.8%	85	7.2%
Other	1254	6.8%	86	7.3%
Orthopedic	1186	6.4%	80	6.7%
Fracture	1020	5.5%	35	3.0%
Gastrointestinal	909	4.9%	69	5.8%
Cardiovascular	587	3.2%	63	5.3%
Ophthalmologic	416	2.3%	30	2.5%
Allergic	332	1.8%	18	1.5%
Dermatological	316	1.7%	27	2.3%
ENT	257	1.4%	25	2.1%
Gynecological	253	1.4%	12	1.0%
Anxiety	76*	0.4%	25	2.1%

* Anxiety was among most common for Northerners but not for other patients. Eight other diagnostic categories were more common within the other group.

visits during this period. Nineteen northerners (2%) and 177 (1.2%) of other patients had three or more visits. Difference overall in rate of multiple vs. single visits fell short of significance ($X^2=3.53$; $p=0.06$).

Discussion

Displaced northern Israelis utilized urgent care services in the Jerusalem area. In general, patients sought treatment for typical medical problems that reflect ongoing healthcare needs not unlike those of local residents. Characteristics of patients were generally similar to those of other patients. Young adult men were somewhat underrepresented in the displaced sample. This may reflect anecdotal observations that more young men stayed behind to care for residences, farms etc.

Based on somewhat fewer diagnoses of trauma or fracture and a somewhat higher rate of daytime visits and lower rate of overnight visits it would seem that more northerners used urgent care services for less-emergent medical care needs. Data from primary care and other medical providers will help put these findings in context. A small but significantly elevated number of visits for northern patients were given a diagnosis of anxiety. These patients arrived at

various hours of the day and complained of a variety of symptoms.

Most explicitly described their concerns about the war and worries e.g., over their home or relatives left behind. Some patients, perhaps some with no other clear resources for psychological support will seek help in urgent care for problems coping with stress of war.

It is not possible based on this self-referred sample to draw conclusions about the types of problems experienced in the displaced population overall. It is possible, for example, that local residents were more likely to be aware that TEREM had x-ray and other resources for fractures and northerners may have been more likely to seek help for this problem in emergency departments. However, the difference in visits for fractures particularly for youngsters is striking given the similarity of rates for most other presenting problems. One possibility is that youngsters who relocated had less access to bicycles and other sport and play activities that may be associated with fractures. Parents living in unfamiliar surrounding may have kept youngsters close by.

Several studies examining populations displaced in the context of war find that these groups are at especially high risk for adverse health

consequences [6,7]. During the process of relocating in wartime, displaced individuals often have limited or no access to essential resources such as food. Once resettled, displaced populations continue to be at heightened risk from environmental hazards, malnutrition, and exposure to disease [7]. However, most research of internally displaced populations has been in countries (e.g., Bosnia) involved in civil war and which experienced more pervasive nationwide effects including disorganization and economic deprivation.

Northern Israelis experienced the stress of fleeing their homes under duress, often after direct exposure to rocket attacks, injury, and some after death of loved ones. Relocation for many was accompanied by separation from and continued worry about loved ones who stayed behind to guard homes and farms or to maintain income. On the other hand, the northern Israeli relocation typically took hours or days rather than weeks or months and it occurred within a friendly country so individuals moved to conditions of relative safety. Furthermore, most regions in Israel outside the north functioned with only limited interference during the war so dislocated individuals were able to draw money from bank accounts, shop, and obtain essential services such as medical care services from regional clinics and hospitals. It appears that urgent care played an important role in maintaining ongoing access to medical care.

Limitations

Further data from a variety of medical settings (primary and specialty clinics, emergency departments in central Israel) will be needed to gain a comprehensive picture of medical utilization patterns of displaced persons. Thus we cannot estimate at this time what portion of medical services for displaced individuals TEREM provided. We also have no reliable estimates about what proportion of the 300,000 individuals displaced from the North were staying in the geographic regions served by TEREM clinics so we cannot estimate the possible pool of patients from which these patients arrived. We await reports on medical utilization patterns from a variety of medical settings.

Conclusions

Urgent care appears to have served an important function in providing medical care for displaced individuals during the war. Most reasons for medical care were similar to those of the local populations. However, displaced children were less likely to appear for care of injury than their non displaced counterparts. A small but significantly elevated percentage of northerners were diagnosed with anxiety, suggesting that some with psychological distress also sought help in this setting. Further data is need from other medical settings to allow for overall description of the Israeli war experience of a large population displaced within its own country for an approximately one-month period of time.

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