Referral Rates from Free-Standing Medical Facilities in Jerusalem to Hospital-Based Emergency Departments: A Brief Report

Deena R Zimmerman MD MPH[1], N Kovalski MD[1]

[1] *Staff Physician, TEREM Emergent Medical Centers, ISRAEL*

Abstract

Urgent care centers have been proposed as a cost saving alternative to hospital-based emergency departments (EDs). Nevertheless, there is little reported data as to what percentage of patients can be definitively treated in this setting. The goal of this study is to report the rate of referral from a series of urgent care centers in the area of Jerusalem to hospital-based EDs. During the study period, the total number of visits during the study period was 205,728. The overall referral rate was 8.3%. Of the referrals, 9.6% were transferred by ambulance. Eighty eight referred patients were successfully contacted. Of these 88 patients, 30 remained in the hospital for more than 12 hours. Of these 30 patients, 24 were in hospital for more than 24 hours. Six of the 88 patients never went to the hospital. The diagnoses that had the highest referral rates varied by age group. Further study of this common site of treatment in Israel is needed.

MeSH Words: Urgent Care, Referral Rates

Background

Studies have shown that much of the care given in hospital-based emergency departments is in fact non-urgent [1]. Free-standing urgent care centers have been proposed as a method to reduce both ED overcrowding and cost [2]. In line with this thinking, the Israeli Health System requires payment on the part of the patient for self-referred use of the emergency department except for certain conditions [3] and the health funds encourage patients to use urgent care centers (“mokdim”) for evaluation of after-hours emergent conditions [4]. However, there has been little study to date of how many patients can be definitively treated in such facilities and how many are subsequently referred to hospital-based emergency departments.

Materials and Methods

TEREM is a privately owned company that establishes and manages free standing 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 are

open evening and weekend hours. Each of these sites provides on-site radiology and laboratory services during all the hours they are open. TEREM uses a proprietary computer system (developed wholly in house) to register, clinically manage and administer all visits to these clinics. This study reports on recorded referral rates from all of the 5 TEREM clinics to hospital-based EDs, covering the one and a half year period from January 1, 2005 to June 30, 2006. A telephone survey was conducted on 100 randomly selected referred patients.

Results

The total number of visits during the study period was 205,728. The overall referral rate was 8.3%. Of the referrals, 9.6% were transferred by ambulance. Eighty eight referred patients were successfully contacted. Of these 88 patients, 30 remained in the hospital for more than 12 hours. Of these 30 patients, 24 were in hospital for more than 24 hours. Six of the 88 patients never went to the hospital.

Certain diagnoses were more likely to require referral. The five diagnoses in each age group with the highest levels of referral are seen in tables 1-3.

Table 1. Most common diagnoses referred to hospital – children (ages 0-20*)*

Age Group	**Diagnosis (Dx)**	**Visits**	**# Referred**	**% of Dxs Referred**
00-05 years	Bronchiolitis	878	165	18.8%
	Head Injury	614	112	18.2%
	Vomiting	1170	177	15.1%
	Pneumonia	4019	494	12.3%
	Fever	5351	591	11.0%
05-10 years	Head Injury	278	73	26.3%
	Laceration	458	99	21.6%
	Abdominal pain	757	104	13.7%
	Vomiting	389	45	11.6%
	Pneumonia	844	73	8.6%
10-15 years	Laceration	314	62	19.7%
	Abdominal pain	675	112	16.6%
	Pneumonia	325	23	7.1%
	Fracture of distal radius	881	60	6.8%
	Fracture of finger	490	32	6.5%
15-20 years	Laceration	323	63	19.5%
	Abdominal pain	736	135	18.3%
	Fracture of distal radius	237	24	10.1%
	Fracture of finger	232	18	7.8%
	Allergic reaction	264	13	4.9%

Table 2. Most common diagnoses referred to hospital – adults (ages 20-65)

Age Group	**Diagnosis (Dx)**	**Visits**	**# Referred**	**% of Dxs Referred**
20-25	Pregnancy - complication	294	251	85.4%
	Abdominal pain	906	219	24.2%
	Laceration	269	38	14.1%
	Headache	233	29	12.4%
	Laceration	269	38	14.1%
25-30	Pregnancy - complication	347	293	84.4%
	Abdominal pain	847	207	24.4%
	Pregnancy, uncomplicated	241	58	24.1%
	Laceration	203	30	14.8%
	Headache	280	23	8.2%
30-35	Pregnancy - complication	259	234	90.3%
	Abdominal pain	627	161	25.7%
	Pneumonia	224	19	8.5%
	Chest pain	440	35	8.0%
	Headache	245	19	7.8%
35-40	Abdominal pain	526	106	20.2%
	Laceration	169	21	12.4%
	Chest pain	529	54	10.2%
	Headache	197	20	10.2%
	Cellulitis/Lympadenitis/Impetigo	361	19	5.3%
40-45	Abdominal pain	384	97	25.3%
	Headache	193	24	12.4%
	Chest pain	599	54	9.0%
	Pneumonia	189	17	9.0%
	Renal colic	178	14	7.9%
45-50	Abdominal pain	337	74	22.0%
	Headache	135	15	11.1%
	Chest pain	696	76	10.9%
	Renal colic	166	18	10.8%
	Pneumonia	214	17	7.9%
50-55	Abdominal pain	263	53	20.2%
	Chest pain	690	86	12.5%
	Renal colic	141	16	11.3%
	Pneumonia	164	15	9.1%
	Hypertension	122	11	9.0%
55-60	Eye disorder	108	33	30.6%
	Abdominal pain	204	45	22.1%
	Chest pain	551	91	16.5%
	Pneumonia	176	15	8.5%
	Cellulitis/Lympadenitis/Impetigo	307	15	4.9%
60-65	Eye disorder	72	27	37.5%
	Abdominal pain	168	30	17.9%
	Laceration	57	9	15.8%
	Chest pain	383	59	15.4%
	Pneumonia	169	25	14.8%

Table 3. Most common diagnoses referred to hospital – elderly (ages 65-90+)

Age Group	Diagnosis (Dx)	Visits	# Referred	% of Dxs Referred
65-70	Abdominal pain	145	44	30.3%
	Chest pain	333	70	21.0%
	Pneumonia	184	26	14.1%
	Laceration	44	6	13.6%
	Vertigo	41	5	12.2%
70-75	Fracture distal radius	46	14	30.4%
	Abdominal pain	147	44	29.9%
	Vomiting	39	11	28.2%
	Pneumonia	149	31	20.8%
	Chest pain	279	52	18.6%
75-80	Dyspnea	45	21	46.7%
	Fracture distal radius	41	16	39.0%
	Abdominal pain	118	43	36.4%
	Pneumonia	137	29	21.2%
	Chest pain	213	41	19.2%
80-85	Abdominal pain	72	27	37.5%
	Fracture distal radius	31	11	35.5%
	Laceration	29	10	34.5%
	Pneumonia	96	23	24.0%
	Chest pain	132	28	21.2%
85-90	Dyspnea	22	12	54.5%
	Headache	13	6	46.2%
	Abdominal pain	32	13	40.6%
	Pneumonia	70	20	28.6%
	Chest pain	63	18	28.6%
90+	CVA	7	6	85.7%
	Head Injury	8	5	62.5%
	CHF	16	7	43.8%
	Chest pain	22	8	36.4%
	Pneumonia	42	15	35.7%

Discussion

As we were unable to find any published referral statistics from other free-standing emergency facilities, there is no direct basis of comparison. We hope these statistics will encourage others to report their findings so that more can be learned about this frequent source of care in Israel.

Overall, it appears that the vast majority of patients can be definitively treated in free-standing emergent care clinics. While our follow up information is, so far, only from a small subset of all referred patients, certain trends are still evident. The fact that over 60% of those referred to the ED were subsequently discharged after a relatively short hospital stay may indicate a tendency to over-refer rather than under-refer. While some of these referred cases did require specialty services only available in a hospital (such as CT imaging or specialty consultation), the question is raised whether a more extensively equipped free standing emergent care center, as well as readily available but non-hospital-based

consultation services, could obviate the need for many of the referrals to the hospital. Further study of this is needed and is ongoing.

The referral rates for a few conditions are notable. There was a very high referral rate (85-

90%) for cases with a diagnosis of "suspected/confirmed complication of pregnancy." TEREM does not have on-site gynecology consultation nor fetal monitoring equipment. Therefore, this high referral rate is almost a matter of policy. This being the case, it raises the question of whether certain conditions during pregnancy should be allowed (by the HMOs) to go directly to the hospital-based ED for evaluation. Actual onset of labor can already be self referred without penalty [1]. This is not the case with other complications (such as first trimester bleeding). It can easily be argued that if so many women with suspected complications of pregnancy are referred, then the potential savings to the health care system (by virtue of some cases being manageable in TEREM) may not justify the additional step for the already concerned pregnant woman.

The most prominent reasons for referral varied between age groups. For example, respiratory diagnoses were a very prominent reason for referral especially in the younger and older age groups. Head injury was also a prominent reason for referral for the youngest and oldest age groups. Injury related injuries were most prominent in the late adolescent and young adult age groups. Now that these diagnoses have been identified, further study is needed to help determine what proportion of these referrals are due to clinical need as opposed to nonclinical (i.e. social, medicolegal) concern.

Conclusions

Over 90% of patients are definitively treated in the group of urgent care centers described. Certain diagnoses have higher levels of referral, particularly suspected/confirmed complications of pregnancy. Additional study is needed to determine how many of the referred patients received additional care in the hospital ED that was unavailable to them in the urgent care centers.

References:

1. Schappert SM. The urgency of visits to hospital emergency departments: data from the National Hospital Ambulatory Medical Care Survey (NHAMCS), 1992. Stat Bull Metrop Insur Co., 1995; 76(4):10-9.

2. Merritt B, Naamon E, Morris SA. The influence of an urgent care center on the frequency of ED visits in an urban hospital setting, 2000; 18(2):123-5.

3. National Health Insurance Law (Chok Briyut Memshaltit) www.health.gov/downloads/docs/health.pdf

4. www.macabi-health.co.il/site/HE/macabi-asp?pi=417

Competing Interests: The authors are employed as physicians at TEREM-emergent medical centers.

Funding: None

This manuscript has been peer reviewed

Correspondance:

Deena R Zimmerman MD MPH
Nof Ayalon 223
DN Shimshon ISRAEL
Phone: 08 9790420
Fax: 08 9790512

e-mail: yoatzothalacha@nishmat.net