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## Intensive care physicians' attitudes concerning distribution of intensive care resources

### A comparison of Israeli, North American and European cohorts

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**Abstract** *Objective:* To evaluate the attitudes of Israeli intensive care physicians regarding intensive care unit (ICU) triage issues. *Design:* An opinion survey using questionnaires similar to those used in a previous study in the United States. *Setting and participants:* Forty-three physicians, members of the Israel Society of Critical Care Medicine (45%). *Results:* Important factors for admission to the last ICU bed were: small likelihood of surviving hospitalization, irreversibility of acute disorder, nature of chronic disorders and the physician's personal attitude. Most respondents would admit a patient with a predicted survival of a few weeks (70%) or a patient whose quality of life would be poor according to the physician's (98%) or patient's (77%) definition, to the last ICU bed. The personal attitude of the respondents and their own view of the patient's quality of life were consid-

ered as important as the quality of life as viewed by the patient. Israeli physicians tended to refuse patient admission into the ICU more than their US counterparts. Most Israeli physicians refused to discharge an ICU patient in order to admit another, despite bed shortage. *Conclusions:* The attitudes of Israeli intensive care physicians towards distribution of ICU resources differ from those of their United States counterparts; they are more paternalistic and comply less with requests for admission. Such attitudes are comparable to those expressed by some European intensive care physicians, highlighting the existence of diversity in the factors important to physicians' decision-making.

**Keywords** Attitudes · Resource distribution · Intensive care · Paternalism

## Introduction

Information about the attitudes of physicians to triage could be used to improve resource allocation in intensive care. The pressure to admit/discharge intensive care unit (ICU) patients varies, depending on the size, location, characteristics and bed occupancy of different hospitals [1]. Reliable and objective scores for triage decisions are unavailable. Cultural differences and religion are also important in medical, ethical decisions [2]. Physicians' compliance with guidelines for ICU utilization is poor; only 4/20 recommendations of the Society of Critical Care

Medicine for ICU triage were observed in a multi-center trial [3]. Physicians' abilities correctly to assess ICU patient survival at the time of triage is limited [4]. Thus, decisions regarding ICU provision are not based on benefit estimates, allowing admission of patients with little likelihood of survival [2, 5].

The present study evaluated the attitudes of Israeli intensivists to ICU triage and compared them to those of intensivists elsewhere [2, 5] in order to investigate whether differences regarding these issues exist.

## Materials and methods

An anonymous survey was conducted among Israeli ICU physicians following IRB approval. Informed consent was implied by questionnaire completion. Questionnaires (with an introductory letter) were mailed to all physician members of the Israel Society of Critical Care Medicine (ISCCM) in June 1994. Three rounds of identical questionnaires were resent to non-responders at 6-month intervals.

The questionnaires were originally developed in English and validated prior to use [5]. They underwent English to Hebrew translation with linguistic validation for the purpose of this study, verifying comprehension and allowing cohort comparison. Data included: (1) the demographic and professional characteristics of the respondents, (2) the importance of various factors in forming a decision whether to admit a patient into the ICU or not and (3) scenarios where the respondents were requested to choose which patients warranted admission to the last ICU bed and which they would discharge from the ICU to accommodate another acutely ill patient. All questions were closed.

Data analysis was performed using SPSS 10.0 (SPSS, Chicago, Illinois). Descriptive statistics (counts and percentages) were used for demographic data and decisions to admit or discharge patients. Chi-square was used to compare the physicians' responses in relation to their demographic details. Religiosity was used both as an ordered variable and a dichotomy. Spearman Correlation Coefficient (SCC) was chosen to evaluate the association between ordered variables in the physician's demographic data (experience, seniority, percent of time spent working in ICU, number of hospital and ICU beds) and replies to the various questions regarding admission and discharge of patients. Significance was defined as  $p$  less than 0.05 in both Chi-square and SCC.

Confidence intervals were calculated for the difference between the two cohorts in the percent of replies affirming that a factor is important in deciding whether to admit a patient to the last ICU bed. Results were tabulated and presented alongside the previous US study [6].

## Results

The response rate was 45% (43/95). The characteristics of the respondents have been published elsewhere [6]. The mean age of the respondents was 50 years (range 35–65). They practised in hospitals with a median total number of 650 beds and 6 ICU beds. Twenty-four respondents (56%) were academic.

Table 1 demonstrates the factors considered important in forming the decision whether to admit a patient to the ICU. Religious physicians placed greater importance on "your personal attitude" than those who were not ( $p=0.035$ , Chi-square). Physicians spending more time in the ICU considered the quality of life as viewed by the patient (SCC  $-0.4062$ ;  $p<0.05$ ) and the patients' degree of alertness (SCC  $-0.4463$ ;  $p<0.01$ ) less important.

Given a situation with empty ICU beds and a patient being admitted to a ward if not granted ICU admission, a similar percent of Israeli (98%) and US (94%) respondents would admit a patient who might live for several years but whose quality of life would be poor according to the physician. An equal percent (77%) of respondents in both cohorts would admit a patient who might live for several years but whose quality of life would be poor according to the patient. More Israeli (70%) than US professionals (54%) were likely to admit a terminally ill patient with a predicted survival of no more than a few weeks. Physicians working in larger (SCC 0.4053;  $p<0.01$ ) and general (Chi-square  $p=0.036$ ) ICUs were less likely to admit the terminally ill patient.

Table 2 lists responses regarding admissions to the last ICU bed and discharges in order to accommodate a young asthmatic patient with acute respiratory failure. Israeli intensivists working in larger hospitals (SCC 0.3438;  $p<0.05$ ) and larger ICUs (SCC 0.348;  $p<0.05$ ) were less likely to admit a terminal patient with an iatrogenic

**Table 1** Percent of respondents who considered the specific detail important in deciding admission to the last ICU bed

Information	Israel ( $n=43$ )	US ( $n=600$ )	Confidence Interval for the difference (95%)
Patient unlikely to survive hospitalization	81	40	27–55
Patient's acute disorder is probably not reversible	79	39	26–54
Nature of chronic disorders	65	31	18–50
Your personal attitude	56	19	21–53
Quality of life as viewed by physician	49	17	16–49
Quality of life as viewed by patient	44	51	(–9)–24
Patient's age	33	6	12–42
Patient had done poorly during present hospitalization	28	8	5–35
Patient's alertness	28	17	(–4)–26
Nursing morale	28	6	7–37
Previous mental/psychiatric history	21	2	6–32
Pressure from the patient or physician	21	11	(–4)–24
Patient's previous hospital admissions	19	3	3–29
Costs to society	7	5	(–7)–11
Financial cost-benefit analysis	7	4	(–6)–12
Social and economic impact on family	2	5	(–8)–8
Social worth	0	2	0–0

**Table 2** Part 1 of the table lists responses to the question “Which patients would you admit to the last ICU bed”. Part 2 of the table lists responses to the question “Which patients would you discharge from the intensive care unit in order to accommodate a 25-year-old asthmatic patient with acute respiratory failure in the setting of a shortage of beds?”. All values given are in percent

Admission decisions	Yes		No		Other	
	Israel	US	Israel	US	Israel	US
<b>Part 1</b>						
A A 50-year-old man with terminal metastatic lung carcinoma with massive hemoptysis whom the thoracic surgeons believe is not a surgical candidate	2	43	95	46	2	11
B A 25-year-old woman in a persistent, chronic vegetative state with ARDS	21	44	74	44	5	12
C A 50-year-old man with terminal metastatic lung carcinoma with a myocardial infarction and premature ventricular contractions	30	68	67	23	2	9
D A 50-year-old woman with multiple sclerosis for 20 years and quadriplegia for 10 years who is believed to be terminal and who has just been intubated for an aspiration pneumonia caused by placement of a feeding tube in the right main stem bronchus	44	71	49	18	9	11
E A 35-year-old man with AIDS and <i>Pneumocystis carinii</i> pneumonia treated for 5 days with Bactrim, who subsequently develops respiratory failure (usually terminal imminently) and who requests ICU admission	65	75	33	15	2	10
F An 80-year-old man with COPD and ARDS	70	79	16	10	12	11
G A 60-year-old man with mild COPD, acute respiratory failure (PCO <sub>2</sub> acutely increasing to 80 torr [10.7 kPa] with decreased mental status) secondary to Guillain-Barre syndrome (a reversible disorder) and a living will stating that the patient refuses artificial ventilatory support at any time	77	61	16	28	7	11
<b>Part 2</b>						
A A 45-year-old woman with MOF in the ICU who is in renal failure (no longer requiring dialysis) and whose ARDS has resolved but still requires ventilatory support	9	2	88	77	0	21
B A 40-year-old woman who tried to commit suicide by driving her car into a pole. She is postoperative after repair of her traumatic injuries, requires a ventilator and requests that everything be removed so she can die in peace	9	42	88	46	2	12
C A 45-year-old woman with MOF in the ICU for 8 weeks who receives moderate doses of dopamine and moderate levels of PEEP	19	9	81	82	0	9
D A 60-year-old man 16 hours post-aortic aneurysm repair who had an MI 3 months ago. He is hemodynamically stable and has a pulmonary artery catheter in place	40	13	56	78	0	9
E A 20-year-old man with massive subarachnoid hemorrhage who remains in coma 2 weeks after admission and who breathes spontaneously, but requires ventilatory support which is not usually provided on the general ward	47	32	49	55	5	13
F A 6-year-old child who is brain dead. You are waiting for the family to arrive to discuss the possibility of an organ transplant	61	34	35	55	5	11

complication and more likely to discharge a comatose patient (SCC 0.3604;  $p < 0.05$  and SCC 0.3577;  $p < 0.05$ , respectively). Older physicians were less likely to admit a patient suffering from HIV (SCC  $-0.4463$ ;  $p < 0.01$ ). Both Israeli (84%) and US (87%) respondents did not believe age should be a criterion for refusing ICU admission.

## Discussion

Israeli physicians were less likely than US physicians to admit patients to the ICU. Nonetheless, the majority of respondents would still admit either a patient whose quality of life would be poor according to the patient or a patient with a predicted survival of no more than a few weeks. Almost all physicians would admit a patient whose quality of life would be poor according to the physician.

Factors having an important influence on forming the decision to admit a patient were reminiscent of those described by the US respondents, but agreement was greater in the current study. Similar to the US cohort, most Israeli physicians refused to discharge most ICU patients when presented with a young asthmatic patient with acute res-

piratory failure that required ICU care in the setting of bed shortage. Notable exceptions were a brain dead child who was a potential organ donor and a patient comatose for 2 weeks.

Comparing the present and US respondents, the majority were male, married and spend a significant amount of time in the ICU [5]. Differences between cohorts included an older age (50 vs 38 years), a physicians-only cohort (the US study included a small number of ICU nurses) and fewer females (5 vs 23%) [5]. Comparison with European respondents was impossible due to questionnaire differences [2].

Patient autonomy was less important for Israelis [5]; their personal attitude and view of the patients' quality of life was considered as important as that of the patient. European surveys display similar paternalistic attitudes [7, 8]. Most Israeli and European [2] ICU physicians, but only approximately 50% of US respondents [5], were likely to admit a patient with a predicted survival of no more than a few weeks to the last ICU bed. This possibly reflects differences in attitudes towards terminal illness, or diverse expectations from ICU therapy between countries.

Communication barriers exist between ICU physicians and patients [9]. The current study suggests that even when patient preferences are known, physicians may choose not to comply. Few Israeli physicians were likely to discharge a patient with a reversible disease who requested to die, compared with approximately 50% of US professionals. Cultural differences regarding the sanctity of life, a fundamental Jewish principle [10], may have led to reluctance in cooperating with requests inconsistent with the preservation of life. Similar attitudes are more commonly seen in Southern Europe [2] than in Northern Europe [2] and the US [5].

Intensive care unit physicians have a greater obligation to current ICU patients than to admission candidates [11]. Whilst delayed transfer to the ICU increases 30-day mortality [12] and ICU admission decreases hospital mortality [13, 14], early ICU discharge increases mortality [15]. Israelis were both more likely to discharge one patient in order to admit another and less likely to admit new patients than their US counterparts. This may relate to the scarcity of ICU beds in Israel. Additionally, lesser compliance with admission in general may be explained by decreased apprehension with regard to litigation, even in cases of an iatrogenic complication.

Increased Israeli compliance was seen for admission of a patient in lieu of a potential donor. This may relate to the lower incidence of consent for donations in the Israeli public (yielding efforts to maintain a potential donor in the ICU less productive), to Israeli intensivists' non-acceptance of the organ donor as the sum of his potential rather than as an individual or to greater ICU bed scarcity in Israel. This issue has yet to be examined in Europe.

Study limitations include: the reporting of attitudes rather than actual practice; small sample size and non-representation of all Israeli intensivists. Positive factors include a response rate akin to the US (52%) [5] and Europe (40%) [2], and that a majority of the respondents are ICU directors/senior physicians who are responsible for triage decisions.

Intensive care unit physicians practising outside the US may express alternative attitudes to resource distribution, based on personal ethics or their practice circumstances (e.g. size and type of ICU). This study highlights the existence of such diversity. Further research in individual countries is necessary to improve consistency in medical practice.

## References

1. Sirio CA, Knaus WA (1992) Triage and assessment of severity of illness. In: Hall JB, Schmidt GA, Woon LDH (eds) *Principles of critical care*. McGraw Hill, New York, pp 551–557
2. Vincent JL (1999) Forgoing life support in western European intensive care units: the results of an ethical questionnaire. *Crit Care Med* 27:1626–1633
3. Azoulay E, Pochard F, Chevret S, Vinsonneau C, Garrouste M, Cohen Y, Thuong M, Paugam C, Appere C, De Cagny B, Brun F, Bornstain C, Parrot A, Thamion F, Lacherade JC, Bouffard Y, Le Gall JR, Herve C, Grassin M, Zittoun R, Schlemmer B, Dhainaut JF, The PROTOCETIC Group (2001) Compliance with triage to intensive care recommendations. *Crit Care Med* 29:2132–2136
4. Rodriguez RM, Wang NE, Pearl RG (1997) Prediction of poor outcome of intensive care unit patients admitted from the emergency department. *Crit Care Med* 25:1801–1806
5. Attitudes of critical care medicine professionals concerning distribution of intensive care resources (1994) The Society of Critical Care Medicine Ethics Committee. *Crit Care Med* 22:358–362
6. Soudry E, Einav S, Levin PD, Grunfeld GB, Sprung CL (2003) Comparison of attitudes of Israeli and North American intensive care healthcare professionals concerning forgoing of life sustaining treatments. *IMAJ* 5:770–774
7. Ferrand E, Robert R, Ingrand P, Lemaire F (2001) Withholding and withdrawal of life support in intensive care units in France: a prospective survey. *Lancet* 357:9–14
8. Pochard F, Azoulay E, Chevret S, Vinsonneau C, Grassin M, Lemaire F, Herve C, Schlemmer B, Zittoun R, Dhainaut JF (2001) French intensivists do not apply American recommendations regarding decisions to forgo life-sustaining therapy. *Crit Care Med* 29:1887–1892
9. Hanson LC, Danis M, Lazorick S (1994) Emergency triage to intensive care: can we use prognosis and patient preferences? *J Am Geriatr Soc* 42:1277–1281
10. Rosner F (1986) *Modern medicine and Jewish ethics*. Yeshiva University Press, New York, pp 189–207
11. Guidelines for intensive care unit admission, discharge and triage (1999). Society of Critical Care Medicine, Task Force of the American College of Critical Care Medicine. *Crit Care Med* 27:633–638
12. Parkhe M, Myles PS, Leach DS, Maclean AV (2002) Outcome of emergency department patients with delayed admission to an intensive care unit. *Emerg Med* 14:50–57
13. Sprung CL, Geber D, Eidelman LA, Baras M, Pizov R, Nimrod A, Oppenheim A, Epstein L, Cotev S (1999) Evaluation of triage decisions for intensive care admission. *Crit Care Med* 27:1073–1079
14. Joynt GM, Gomersall CD, Tan P, Lee A, Cheng CA, Wong EL (2001) Prospective evaluation of patients refused admission to an intensive care unit: triage, futility and outcome. *Intensive Care Med* 27:1459–1465
15. Daly K, Beale R, Chang RW (2001) Reduction in mortality after inappropriate early discharge from intensive care unit: logistic regression triage model. *BMJ* 322:1274–1276