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Medical Specialties in Crisis: An Exploratory Study

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RESEARCH REPORT

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Executive Summary

Background

For years, the health system has been aware of the crisis affecting several medical specialties. The Amorai Commission (State of Israel, *Report of the Commission on the Publicly Financed Health Care System and the Status of Physicians*, 2002) examined the issue and identified several parameters for "medical specialties in crisis." However, the Commission concluded that it was unable to make a fundamental, in-depth examination of the issue, due to a lack of data and appropriate tools, and recommended that it be investigated by a forum of professionals. This study aimed to shed light on the issue, which has not until now been studied thoroughly in Israel. To learn about the problems and examine ways of addressing them, we conducted a case study of two specialties – general surgery and internal medicine – that have both been identified as being in crisis in the medical literature, in testimonies presented to the Amorai Commission, and in the preliminary interviews we conducted.

Study Goals

1. To identify criteria and measures for a "medical specialty in crisis"
2. To assess the extent of the crisis in general surgery and internal medicine
3. To investigate the causes for the crisis in those specialties
4 To identify potential solutions for the crisis in those specialties

Study Methods

The study, which draws on several sources of information, used a combination of study methods:

1. **A qualitative analysis**: In order to identify the main issues behind the sense of crisis, to formulate the criteria for a "medical specialty in crisis," and to identify the measures to examine the extent of the crisis, we conducted a qualitative analysis. The analysis included: analysis of written testimonies submitted to the Amorai Commission; analysis of the contents of open interviews with key personnel in the health system; and analysis of the contents of open (semi-structured) interviews with hospital directors and heads of general surgical and internal medicine wards.
2. **Secondary analysis of survey data**: In order to examine background characteristics, characteristics of the job, and reports about the quality of working life of general surgeons compared with specialists in other fields of medicine, we conducted a secondary analysis of data from a national survey of specialists (Nirel, Shirom, and Ismail, 2003).
3. **Analysis of administrative data**: To examine and quantify the extent of the crisis, analyses were carried out of national data files (e.g., from the Central Bureau of Statistics) relating to the long-term supply and demand for the medical specialties being examined.
4. **International professional consultation**: In order to obtain information about possible solutions, online consultations were held with heads of medical societies and associations abroad.

Main Findings

Analysis of the contents of the testimonies presented to the Amorai Commission and the interviews with hospital directors and heads of general surgery and internal medicine wards revealed five criteria for a medical specialty in crisis:

1. A shortage of "good" residents (those whom the ward heads consider suitable for the specific specialty)
2. Difficulty filling vacant positions
3. Not enough physicians for the quantity of clinical work in the ward and, consequently, a heavy workload
4. A sense of insufficient remuneration and limited opportunities to supplement income
5. Impaired quality of working life – overload, burnout, and lack of satisfaction among the physicians.

The findings regarding the extent of the problem in general surgery and internal medicine for each of the above are as follows:

1. Shortage of "Good" Residents

Based on an analysis of the contents of the testimonies of key persons in the health system, hospital directors, and heads of wards, this criterion was examined from three angles: (a) Achievements in residency exams (pass rates in Stage 1 exams); (b) The quality of earlier training (the percentage of graduates from overseas compared with those who graduated in Israel, among those who completed their residency, given the widely held view that the academic standards in their countries of origin are lower than they are in Israel); (c) Gender (percentage of women among the residents in each specialty).

a. ***Achievements in residency exams***: Between 2000 and 2005, the pass rate for Stage 1 general surgery exams declined from 80% to 50%. (Stage 1 exams are written tests of knowledge consisting mainly of multiple-choice questions that are based on similar exams abroad and are considered a reliable test of knowledge of the specialty.) On average, the pass rate for Stage 1 residency exams in general surgery (59%) was similar to that in orthopedics, plastic surgery, and urology. These rates were between those for medical specialties with high pass rates (e.g., pediatrics, dermatology, and cardiothoracic surgery) and those with low rates (e.g., pathology, anesthesiology, and psychiatry). The residents' pass rate in internal medicine, which was around 40% in 2000, increased gradually to 50% in 2005. Their average pass rate in the years from 2000–2005 was 53%. During those years, the pass rate for Stage 1 exams for all residents in all medical specialties was 56%.
b. ***Quality of earlier training***: General surgery and internal medicine (like orthopedics, cardiology, and pediatrics) are medical specialties that had a moderate proportion of overseas graduates (50%–59%) throughout the period investigated. This is between the group of specialties with a relatively low percentage (30%–50%) of overseas graduates (e.g., ophthalmology, dermatology, ob-gyn, and ENT) and those with a high rate of 60%–90% (e.g., anesthesiology, geriatrics, neurology, urology, and pathology). During the period between 1990–1994 and 2000–2005, the percentage of overseas graduates among physicians

completing their residency in general surgery increased by 12 percentage points, from 45% to 57%. During the same period, there was also an increase of 24 percentage points, from 37% to 61% in the percentage of overseas graduates among those completing their residency in internal medicine. In both fields, the percentage of overseas graduate residents was higher in hospital wards in the periphery than in those in the center of Israel. Among the residents as a whole, the percentage of overseas graduates during the same periods increased by 8 percentage points, from 46% to 54%.

c. ***Gender***: The proportion of female physicians in Israel is growing. In 2004, 40% of all licensed medical practitioners were women. This increase worries some of the respondents, who do not consider that women constitute a suitable workforce, particularly in surgical wards, based on the assumption that they are less physically fit than men are and that family commitments are likely to interfere with their work on the ward. General surgery, like orthopedics, urology, and cardiology, remains one of the specialties in which a far greater proportion of men complete their residency than women. However, during the period between 1990–1994 and 2000–2004, the proportion of women completing their residency in general surgery increased by 9 percentage points, from 4% to 13%. In 2004, the figure reached 20% of all those completing their residency in general surgery. In the case of internal medicine, which is similar to ob-gyn, ENT, dermatology, and ophthalmology, in which there had been a moderate proportion of women, the figure increased during the period between 1990–1994 and 2000–2005, from 25% to 49%. In 2005, some 60% of residents completing their residency in internal medicine were women.

2. Difficulty Filling Vacant Positions

Data from the Civil Service Commission revealed that from 1999–2004 the average percentage of vacancies for physicians in all wards in government hospitals, in relation to filled positions, was 8%; at the same hospitals, it was 9% in general surgical wards and 10% in internal medicine wards. Over the years, there have been no clear signs of a change in the number of vacant positions in general surgery, but in the internal medicine wards, there was a sharp increase from 6% in 1999 to 10% and more in subsequent years.

Nevertheless, in the interviews, the heads of surgical wards stressed that there were not at that time any long-standing vacant positions (budgeted or "standard" positions), nor had there been in the past. However, they did say that there are now fewer candidates for every vacant position in the ward. According to Civil Service Commission data, between 1999 and 2004, the average rate of candidates applying for the position of resident in a general surgical ward (3.2) was lower than the average in other wards, such as ENT, public health, ob-gyn, geriatrics, dermatology, ophthalmology, psychiatry, pediatrics, and oncology (between 3.8 and 12 candidates on average). However, the rate was higher than that for neonatology, urology, orthopedics, neurology, cardiology, and pathology (between 1 and 2.7 candidates on average).

The heads of internal medicine wards reported that it was difficult to fill vacant positions and that they actually had unfilled positions. On the face of it, this does not tally with the information

from the Civil Service Commission, which showed an increase in the number of candidates applying for residency positions in internal medicine, from 12.9 candidates per position in 1999 to 27.8 in 2004. However, the validity of these figures as a sign of a manpower crisis is cast into doubt by the particular nature of internal medicine: unlike other medical specialties, most physicians who complete their residency in internal medicine subsequently go on to specialize in another field, which explains the difficulty filling positions for senior specialists in internal medicine.

Note that according to the respondents – general surgeons and internal medicine specialists alike – the greatest difficulty is finding good candidates for the existing positions. They are at present obliged to compromise and accept residents whom they would not have accepted in the past.

3. Work Overload and Shortage of Physicians

Ministry of Health data reveal that between 1993 and 2005, there was a decline in the average hospital stay (from 3.4 days to 2.7 days in general surgery and from 4.9 to 4.2 in internal medicine). In contrast, there was an increase in the number of hospital admissions (from 153,700 to 194,800 per year in general surgery and from 232,500 to 352,400 in internal medicine) and turnover of beds (from 91.4 to 117.7 in general surgery and from 72.7 to 89.1 in internal medicine).

Between 1999 and 2004, there was an 8% increase in the ratio of hospital admissions per standard staffed position in the surgical wards of government hospitals – from 360 to 390 admissions per physician, per year. During the same period, in the surgical wards of hospitals belong to Clalit Health Services, there was a decline of 5% in the number of admissions per standard staffed position (from 390 to 370 admissions per physicians in 2005). From 2001–2004 (a period for which we have data for all the hospitals in Israel), the ratio of admissions per standard staffed position was similar in the government hospitals and those belonging to Clalit Health Services. In the surgical wards, it was 380 admissions per physician, per year. However, it is possible that the number of admissions per physician is not a measure that fully reflects the burden of clinical work. Over the past decade, there have been improvements in medical knowledge and technology and the standards of clinical activity. At the same time, the average age of patients has risen, as has the complexity of their illnesses. In fact, a measure of hospital admissions adjusted to complexity of the case revealed that between 2000 and 2005, there was a 35.9 percentage point increase in one surgical ward and an 8.5 percentage point increase in another, per this measure, over the rate of change in unadjusted hospital admissions in the same wards during the same period.

Most of the increase in the workload of internal medicine wards occurred between 1993 and 1999. During this period, the number of hospital admissions, the turnover of beds, and the total number of hospitalization days increased. However, at the same time, there was a 15% increase in the number of hospital beds, together with an increase in the number of standard staffed positions. (In Israel, collective bargaining agreements tie staffing levels of physicians to the

number of beds.) Between 1999 and 2005, there were no changes in these measures. There was a further increase of 8% in the number of beds and 20% in the number of standard staffed positions along with a decline of 6% in the ratio of admissions to staffed positions at government hospitals (from 520 hospitalizations per physician in 1999 to 490 in 2004). This improvement may be reflected in a reduction in the workload of physicians in internal medicine wards.

The secondary analysis of the data from the national survey of specialists, which was conducted to examine the characteristics of the job, revealed that senior physicians in general surgical wards work more hours per week at the hospital (75 hours a week, including hours on call and duty rotation) than, on average, their colleagues in cardiology (65 hours), gynecology (56) and ENT and ophthalmology wards (55). Their average number of hours per week at the hospital together with additional, outside work was also higher (64 hours per work excluding hours on call and duty rotation; 86 hours including hours on call and duty rotation). We do not have the equivalent data for specialists in internal medicine at the hospitals.

4. Sense of Insufficient Remuneration and Limited Opportunities to Supplement Income

The heads of general surgical wards complained about the remuneration given to physicians in their wards and expressed the sentiment that it was not commensurate with the investment required in the specialty. In particular, they stressed, payment for being on call in a general surgical ward, including actively working while on call, is the same as that in other wards, even though, unlike physicians in other wards, they actively perform operations, particularly emergency operations, while on call. Heads of internal medicine wards also complained about the low remuneration for internal medicine physicians, who work under conditions of physical and mental pressure in wards with far-above-average occupancy, whose patients, most of whom are nursing cases, have complex conditions.

We did not examine the remuneration, but concentrated on the possibility of other sources of income (which characterize the labor market for hospital physicians). We found that a high proportion of senior physicians in general surgical wards, like their colleagues in other wards, are authorized to work in frameworks outside of the hospital. This is the practice mainly in government hospitals and those belonging to Clalit Health Services and is less common in independent, non-profit hospitals that have private arrangements for medical treatment. The findings of the survey of specialists reveal that 80% of the general surgeons have a second job (mainly in the framework of secondary medical services in the community), like most senior specialists in other medical fields. Among the general surgeons who have a third job, 39% provide a private medical service; this percentage is lower only than the percentage of gynecologists providing private medical services as a third job (47%). The interviews with heads of the internal medicine wards revealed that almost all the senior physicians in internal medicine wards have an extra job. According to the data we received from three hospitals, the percentage was 35%–65% of senior physicians in internal medicine wards. Specialists in internal medicine were not included in the survey of specialists and consequently we have no further detailed information about their work in other frameworks.

Another avenue of extra income for physicians at government hospitals is through the hospital's "health corporations" (special accounts that give the hospitals greater flexibility in the use of monies from research grants, philanthropic contributions, and the sale of certain special services to the health plans). The interviews revealed that in the general surgery and internal medicine wards, such activity is limited and poorly paid. Data collected from several hospitals reveal that there is no activity through health corporations in general surgery and internal medicine wards at hospitals in the periphery. At a medium-sized hospital in the center of the country, where there is such activity, the percentage of general surgeons working in that framework is lower than the percentage of those in other specialties, such as orthopedics, ophthalmology, ob-gyn, and internal medicine.

At the independent, non-profit hospitals in Jerusalem, the percentage of private procedures performed in general surgical wards is lower than that in other "surgical" wards (cardiothoracic surgery, neurosurgery, ophthalmology, and burns), but higher than in "other" wards (Rosen, Ofer, and Greenstein, 2006). Furthermore, a very high percentage of physicians in the internal medicine wards at these hospitals work in "queue cutting" frameworks. The percentage of senior physicians in internal medicine wards who offer private medical services is lower than in the surgical wards. According to the data obtained from one of the hospitals, no physicians in the internal medicine ward are working in "queue cutting" frameworks. Indeed, the survey of specialist physicians at all hospitals shows that 28% of the specialists in general surgical words reported that they are paid a monthly salary and receive additional remuneration for their work at the hospital (e.g., for "Sharap" private medical service, "Sharan" additional medical service, or extra work through the health corporation). The figure is similar to that for gynecologists (26%), but lower than that for cardiologists remunerated in this way (42%).

5. Impaired Quality of Working Life – Overload, Burnout, and Dissatisfaction

An analysis of the data from the survey of specialists indicated that the quality of life of physicians in a general surgical ward is inferior to that of their colleagues in other hospital wards. Firstly, specialists in general surgery feel a greater burden of work than their colleagues do: the multivariate analysis showed that being a general surgeon, as opposed to being an ophthalmologist or gynecologist, doubles the level of perceived pressure at work. Secondly, specialists in general surgery are less satisfied with their work: the multivariate analysis revealed that being a gynecologist or ophthalmologist, as opposed to being a general surgeon, doubles the likelihood of being very satisfied with work. Furthermore, although, like their colleagues specializing in other fields examined in this study, a high proportion of them (81%) still consider their specialty interesting and attractive, a lower proportion of them (58%) than of their colleagues (72%–92%) would, if consulted by medical students, recommend their own chosen specialty. However, there is no difference between them and their colleagues in the percentage of those reporting a high level of burnout, in the form of physical exhaustion (20%) and cognitive burnout and emotional exhaustion (2%–8%). We do not have data of this kind regarding physicians in internal medicine wards at hospitals.

Conclusions and Implications for Policy

The data reveal that the measures we used in the study partially support the problems identified by the analysis of the testimonies of heads of the clinical wards and key personnel in the health system. Between 2000 and 2005, there was a decline in the pass rates of the Stage 1 exams among general surgery residents alongside an increase in internal medicine. General surgery and internal medicine are indeed no longer the leading specialties (as in the past) in the pass rates for Stage 1 exams; however, these rates remain higher than in several other specialties. Between 2000 and 2005, the percentage of overseas graduates in both specialties increased. However, it remains lower than equivalent percentages in other specialties. The percentage of women in internal medicine has risen and it is increasing in general surgery as well. However, the percentage of men completing the residence in general surgery remains higher than in many other specialties and it is possible that the increase in the percentage of women in this specialty reflects the general increase in the percentage of women in the medical profession. It does however appear that general surgery and internal medicine have lost some of their ability to attract male residents, physicians who graduated in Israel, and people with a high level of cognitive skills (reflected in their academic medical studies and application of what they learned) between 2000 and 2005. However, according to these measures, other medical specialties are in deeper crisis.

Is it hard to fill positions in general surgical and internal medicine wards? In the case of internal medicine, the answer is "yes." Between 1999 and 2004, the number of vacant positions in internal medicine increased and today it is above the average for medical positions at government hospitals, implying that it is hard to fill them. With regard to general surgery, the data do not indicate any difficulty and they support the reports of heads of surgical wards, who say that are no long-standing vacant positions, nor have there been any in the past, even though the positions are not always filled by those they would like to see in them.

As to whether there has been an increase in the burden on physicians, between 1999 and 2004, an increase was felt in the workload in general surgery because of the higher ratio between the amount of work and the number of physicians in the ward. The data for the internal medicine wards show an improvement in this ratio, which could be reflected in the decline in the workload of physicians in these wards.

The study shows that it is possible to define criteria for a medical specialty in crisis and to quantify the level of crisis. However, the measures used in this study have their limitations, chiefly regarding the lack of up-to-date, accessible, computerized data, as well as the difficulty translating the criteria into valid measures. However, the measures used partially support the problems we identified by analyzing the testimonies of the study respondents. It is possible to think about other measures to examine the criteria identified, but it should be remembered that the ability to convert them into applicable measures depends on the ability to collect reliable data on a nationwide scale. It will be important in the future to develop mechanisms for gathering and obtaining data from the various health organizations. It is also important to continue developing

relatively simple, yet reliable measures that can be used in the process of re-examining the medical specialties and the level of their crisis and even make comparisons among them.

An analysis of the interviews and written testimonies reveals that the factors responsible for the crisis in general surgery and internal medicine can be divided into three categories:

1. Factors related to the health system and to social, cultural, and financial contexts within the environment in which it functions
2. Factors connected to the organizational structure of the hospitals in Israel and the way that they are managed
3. Factors connected to the characteristics of the specific medical specialty.

In the study, we summarized possible solutions proposed by leading clinical professionals of various levels in Israel and abroad for the crisis facing general surgery and internal medicine. The suggestions consisted mainly of increasing staffed positions for physicians, employing ancillary staff to relieve the clinical and administrative burden on physicians, changing the structure and contents of residents' training or modifying the residency track to make it modular, making the specialties more attractive, and training a new kind of professional along the lines of acute care surgeons and physician assistants.

The solutions proposed by the interviewees in Israel, the respondents in Europe and the United States, and those proposed in the professional literature should be considered in the context of the levels they were addressing – system-wide, hospital, or specific medical specialty. It is also necessary to examine how essential it is to address all the criteria identified in order to find a solution to the crisis or whether there is any merit in addressing any one aspect of the crisis in a specialty without touching on the others. It is, furthermore, important to examine to what extent solutions we have learnt about from other countries' experience can be implemented in the Israeli health system. Evidently, the crisis facing these two important clinical specialties calls for a serious examination of these proposals and, if they are found to be logical and useful, ways must be sought to implement them.

It should be noted that in Israel, as in other parts of the Western world, the status of the physician has changed. In some countries, there is a palpable shortage of physicians and indeed such a shortage is forecast in Israel. The criteria identified in this study and the empirical findings about them are in part an expression of this crisis. While general surgery and internal medicine are not yet facing the greatest crisis according to these criteria, the current trends are perceived by members of the profession to be the "writing on the wall."

In this study, we have constructed a conceptual framework for understanding the main elements of the background to medical specialties in crisis, the factors that cause the crisis, and the criteria for identifying it. This framework, together with the study findings could constitute the basis for establishing criteria for specialties in crisis, for methodically identifying the main factors responsible for the crisis, including the organization of the hospital and the way work is

organized there, and for clarifying the extent of the crisis, and even identifying possible ways of solving it. Although the present study focuses on two specialties, it could constitute the basis for a broader study of additional medical specialties.

Key findings from the study have already been used in manpower policy development; both the Israel Medical Association (IMA) and the Ministry of Finance have made use of the data in their efforts to negotiate a new collective agreement for physicians.

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