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EVALUATION OF QUALITY OF CARE IN
LONG-TERM CARE INSTITUTIONS IN ISRAEL:
THE TRACER APPROACH

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Abstract

This paper focuses on the development of tools for examining quality of care in long-term care institutions for the aged. It examines in depth the quality of care in a number of units previously assessed by government supervisors as being of "good" or "poor" quality, and it identifies the principal factors influencing quality of care.

The paper outlines the use of the tracer methodology in measuring quality of care. A tracer is a well defined and frequently occurring problem (medical, nursing, or psycho-social) which has a known treatment.

Data was collected by a multi-disciplinary team consisting of a physician, nurse, oral epidemiologist, occupational therapist, and interviewers. They examined and interviewed elderly residents and key staff members, conducted on-site observations, and reviewed medical and social records.

Findings regarding 11 tracers from the medical, nursing, and psycho-social areas of care are presented. Each tracer is analyzed through process and/or outcome measures (staff awareness, existence and adequacy of treatment). Structural variables related to the tracers are also considered. Care is defined as being of poor quality when the staff is unaware of the existence of problems, when they remain untreated, or in the case of unsatisfactory outcomes.

The findings reveal that staff awareness is very low for problems of vision, hearing, oral health, incontinence, and loneliness. Treatment of these problems is generally inadequate, even in units classified as "good". For other tracers - including problems of

mobility and difficulty in washing, dressing, and brushing teeth - both staff awareness and treatment rates are higher, but considerable variation was found among units.

A number of direct and indirect causes of deficiencies in quality of care are identified. Government regulations do not clearly define the responsibility of institutions for specific areas of care (such as visual problems). Other contributing factors include unreliable records, non-systematic government supervision, low rates of family involvement, manpower shortages, and insufficient contact with medical specialists in the community.

This study hypothesized that an overall picture of quality can be obtained by examining a limited number of tracers which represent the major areas of care. This hypothesis is supported by the high correlations found among tracers within both the nursing and psycho-social areas. The low correlations found among tracers in the medical area suggest that a larger number of medical tracers is required for adequate measurement of quality. High correlations found between each of the three areas indicate, among other things, that institutions in the study sample which deal poorly with medical problems also deal poorly with nursing and psycho-social problems.

In summary, the tracer approach is found to be useful in that it enables a quantitative and objective evaluation of quality, focuses on specific aspects of care, facilitates the identification of deficiencies in the provision of care, and, if applied over time, enables mapping of trends in care delivery.

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Chapter 1: Introduction

In the wake of the rapid development of Israel's long-term care system, ^{During this time} the government supervisory system is making an increasing effort to raise the level of care and quality of life in institutions for the country's elderly. A number of homes have been closed and various steps taken to improve supervisory methods and training of personnel in institutions. National supervisors in both the Ministry of Health and the Ministry of Labor and Social Affairs have classified the long-term care institutions in Israel (homes for the aged and hospitals for the chronically ill) into five categories (good, satisfactory, mediocre, poor, and very poor) and concluded that 60% were of satisfactory or good quality and 40% of mediocre or poor quality.¹

In order to further improve supervision of the institutional care system, standardized tools need to be developed upon which systematic, ongoing quality of care assessments can be based. *ff homes take up the challenge*

The aims of this study were:

1. To develop tools for examining quality of care in institutions for the aged which can be used as a basis for both research and ongoing supervision.
2. To examine in depth the quality of care in a number of "good" and "poor" units.
3. To shed light on the factors influencing quality of care.

¹ Subsequent references to "good" and "poor" quality will be based on these assessments by supervisors.

Chapter 2 of this paper presents a conceptual framework for examining quality of care, and Chapter 3 presents a detailed discussion of the data collection. Findings regarding the relationship between the extent to which specific structural elements meet accepted standards and the quality of care for each tracer are presented in Chapter 4.

Chapter 5 describes the prevalence of tracers in the study sample, as compared with prevalence rates reported in previous studies in Israel and abroad. Chapters 6 and 7 turn to a discussion of the two dimensions on which the analysis of quality of care was based: staff awareness of problems and extent of treatment.

Chapter 8 presents a reduced set of recommended indicators for measuring quality of care. These indicators are used to provide an overall view of the quality of care for each area of care (medical, nursing, and psycho-social) and for all the areas as a whole. Structural aspects of the institutions are also considered in this context. Detailed examination of the awareness of and treatment for each problem, together with additional information regarding institutional organization and policy, lead to a number of suggested explanations for the shortcomings in quality of care; these are presented in Chapter 9. Chapter 10 discusses the advantages and disadvantages of the tracer methodology and its validity. Finally, Chapter 11 reviews directions for the improvement of the quality of institutional care.

Chapter 2: Conceptual Framework and Methodology

Quality of care can be assessed at the structural, process, and outcome levels (Donabedian, 1969, 1982).

Structural indicators reflect the capacity of an institution to provide good quality of care. Rather than serving as direct measures of quality of care, they help explain the reasons for shortcomings in the provision of care. Examples of structural measures include staffing ratios, extent of staff training, and availability of bathrooms in the institution.

Process indicators can only be evaluated in relation to previously established standards of appropriate care. Examples of indicators of the process of care are staff awareness of problems, the presence of treatment, and the adequacy of treatment procedures.

Outcome indicators focus on the results of care, regardless of the structure or process of care. Examples of outcome measures are oral hygiene and the level of personal cleanliness, which would reflect the adequacy of treatment procedures. Both the process and outcome approaches have advantages and disadvantages. The relative availability of process-based assessment measures, and the assumption of a process-outcome correlation, provide the rationale for using the process approach. The link between process and outcome, however, has not been generally established in most areas of care. Although outcome indicators provide a more direct measure of quality, it is difficult to attribute outcomes to the care provided, unless a longitudinal experimental design is used. In addition it is difficult to find outcomes of care which are determined mainly by the process of care and not by other factors which are beyond the control of care

providers. It is therefore not always possible to attribute the lack of an adequate outcome to inappropriate care. Feasible outcomes are not easy to identify as a standard of comparison.

Figure 1 outlines the links between structural, process, and outcome variables. The structural variables are of two types, the first of which directly influence the second: external variables such as government policies and reimbursement schemes; and internal variables, such as institutional structure (staff-patient ratios) and responsibility of the institution. Both the external and internal structural variables directly or indirectly influence the process and outcome variables, which reflect the quality of care.

This study emphasizes process and outcome indicators and uses the tracer methodology (Kessner, Kalk and Singer, 1973). According to this methodology, a set of well-defined and frequently occurring problems can serve as "tracers" for the evaluation of care delivery by providing information on specific parts of the delivery system and by enabling an evaluation of the interaction between recipients, providers, and the institutional environment.² Eleven tracers (problems) were selected from three broad areas: medical, nursing, and psycho-social (Table 1). Following the guidelines set by Kessner (1974), the definition of a problem or condition as a tracer was based on the following criteria: high prevalence of the problem, a significant functional impact on the resident, a defined diagnosis, standard procedures of case management, and the likelihood that proper

² The basic assumption of the tracer approach is that the manner in which care is provided for specific problems (defined as tracers) is an indicator of the quality of care of the entire care delivery system. This assumption has not yet been fully substantiated in the literature.

Figure 1: Factors that Influence Quality of Care in Long-term Care Institutions

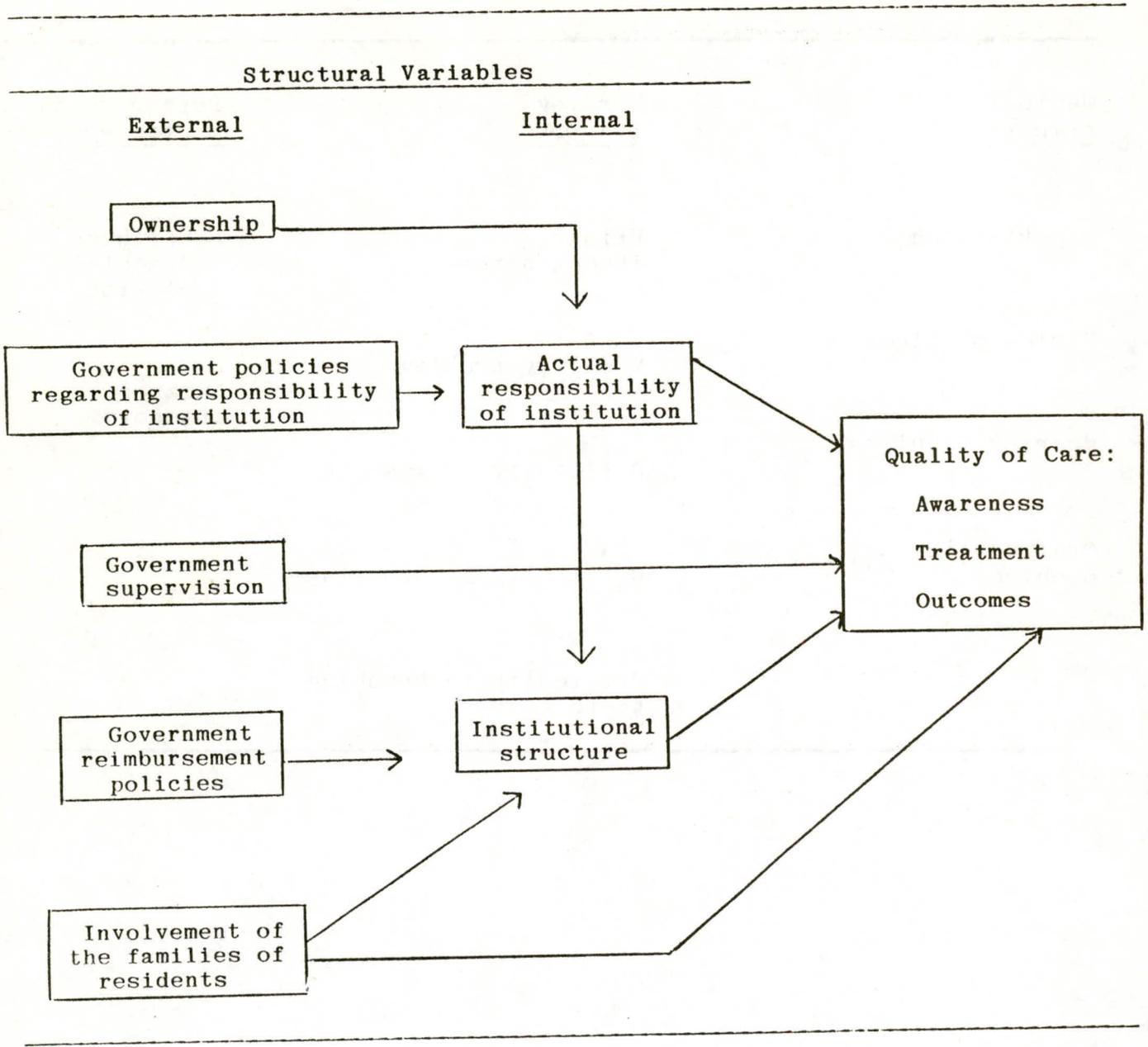


Table 1: Tracers for Measuring Quality of Care

<u>Medical tracers</u>	<u>Nursing tracers</u>	<u>Psycho-social tracers</u>
Hypertension	Urinary incontinence	Loneliness and social isolation
Vision problems	Mobility problems	Lack of autonomy
Hearing problems	Difficulty in washing	
Oral health problems	Difficulty in dressing	
	Difficulty in brushing teeth	

treatment will positively influence the patient's condition.

The starting point in the evaluation of quality of care using the tracer approach is the frequency of the problem (prevalence). The prevalence of a tracer, although not a direct measure of quality, may reflect the adequacy of preventive efforts and care. In this regard, a distinction must be made between two types of problems. The first are those which may be cured or resolved, freeing the elderly from the need for continuous care (other than surveillance). Examples include loneliness and problems of vision, hearing, and oral health. Their prevalence is also a type of outcome (e.g., the prevalence of vision problems is diminished by provision of adequate eye glasses). The second type of problem are chronic problems for which the best possible care is to keep the condition under control or to ensure optimal functioning. Examples include hypertension, diabetes, urinary incontinence, and difficulty in dressing, washing or mobility. In these cases, prevalence of the problem does not reflect an outcome of care and therefore is not a proper measure of the quality of care. A more suitable outcome measure for these types of problems is the proportion of residents whose problems are under control (e.g., the percentage of treated hypertensives whose blood pressure is under control).

When outcome is reflected in the prevalence of a problem, quality of care is difficult to measure at one point in time. In such cases, absence of the problem could be a result of successful treatment or could indicate that the problem never existed. To establish a reference point by which the successfully treated cases can be identified, more than one measurement over time is required. When the

outcome differs from the prevalence, on the other hand, both can be compared at one point in time in order to evaluate the adequacy of treatment.

The operational definition for good quality of care used in this study is staff awareness of the existence of problems and existence and adequacy of care for problems susceptible to treatment. The provision of treatment by the staff depends foremost on their awareness of the problem. Although treatment may occasionally occur in the absence of staff awareness, due to the initiative of residents or their families, awareness by institutional staff is the first step in the care provision process and constitutes the first measure of quality of care in this study. Treatment, the second measure, may be considered at two levels: the existence of treatment and the adequacy of treatment.

A glance at the measures of quality of care used for each tracer reveals various patterns of measurement, based on the following criteria: whether quality was assessed for each tracer at the process level, the outcome level, or both; and whether prevalence of the problem alone constitutes an outcome (or prevalence and outcome differ from each other).

Table 2 illustrates the patterns of measurement of quality of care. Two basic patterns can be distinguished. In the first, the prevalence differs from the outcome. In this pattern, there are both process and outcome measurements for only four tracers, owing to difficulties in measuring outcome. In the second pattern, prevalence equals outcome, and for one of the tracers (autonomy), there is a measurement of prevalence only - not of process.

Table 2: Patterns of Quality of Care Measurement

Tracers	Process Indicators	Outcome Indicators
1. Hypertension ^a	- Doctor's awareness - Adequate follow-up	Percentage of hypertensives under control, of all residents suffering from hypertension. ^c
2. Vision difficulties ^b	- Doctor/nurse awareness - Visited a specialist during past year	Percentage of residents with vision difficulties whose problems were solved (with eye glasses).
3. Hearing difficulties ^b	- Doctor/nurse awareness - Visited a specialist during past year	Percentage of residents with hearing difficulties whose problems were solved (with hearing aids). ^c
4. Oral health problems ^b	- Doctor's awareness - Visited dentist during past year	Percentage of all residents with oral health problems.
5. Mobility problems ^a	- Assistance in walking - Physiotherapy	-
6. Difficulty in washing ^a	- Nurse's awareness - Assistance in washing	Percentage of residents who have difficulty in washing and who are clean.
7. Difficulty in dressing ^a	- Nurse's awareness - Assistance in dressing	Percentage of residents who have difficulty in dressing and are properly dressed.
8. Difficulty in brushing teeth ^a	- Nurse's awareness - Assistance in oral care by nurse	Percentage of residents who have difficulty in brushing their teeth and whose oral hygiene is acceptable.
9. Urinary incontinence ^a	- Doctor/nurse awareness	-
10. Feeling of loneliness ^b	- Nurse/Social worker awareness - Participation in activities - Individual care by social worker	Percentage of all residents who do not feel lonely.
11. Lack of autonomy ^b	-	Percentage of all residents who do not feel that they lack autonomy.

^a The results of care are not expressed in the prevalence of the problem.

^b The results of care are expressed in the prevalence of the problem.

^c Because of the small number of residents for whom these problems were under control (hypertension) or solved (hearing difficulties), these indicators were not used in the study.

Chapter 3: Data Collection

The study was conducted in nine units, four in private institutions and five in public institutions.³ Two of the sample units were for independent elderly, three were for frail elderly, and four were nursing units (these are the standard levels of classification of elderly residents in Israel). National supervisors had previously judged the quality of all long-term care institutions, taking into account medical care, nursing care, physical structure, equipment, staffing ratios, services, and resident satisfaction. Of the nine institutions chosen for this study, five had been labelled "good" and four "poor".

A multi-disciplinary team employed a complex data collection system that consisted of medical and nursing examinations and interviews with the elderly residents (136 elderly - a 36% sub-sample of the units' total population), on-site observations, interviews with key staff members, and inspection of medical and social files for the 136 sampled elderly (see Figure 2). Data was gathered at two levels:

1. The individual level

- (a) The elderly person was interviewed and examined by the study team physician, nurse, oral epidemiologist, and occupational therapist regarding the tracer conditions and related indicators.

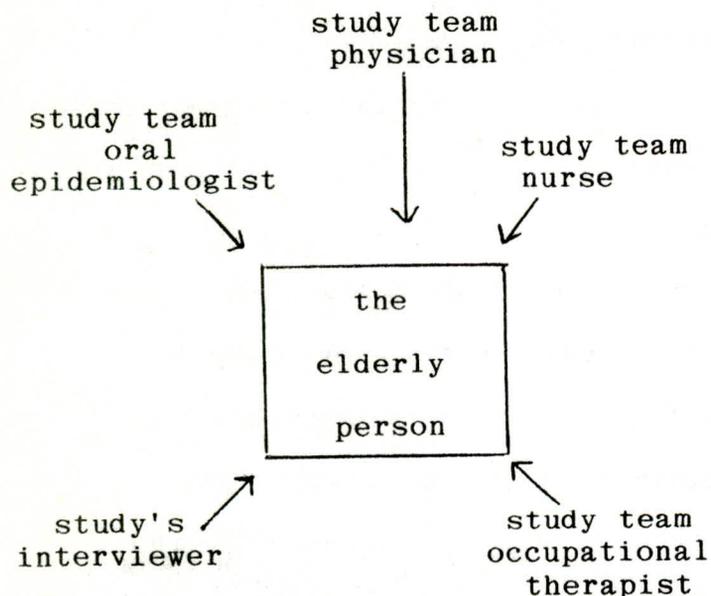
- (b) The responsible ward nurse was interviewed by the study team nurse, the treating physician was interviewed by

³ A unit was defined as an institutional ward or, in the absence of departmental divisions, an entire institution. In this paper, the terms "unit" and "ward" are used interchangeably.

Figure 2: Data Collection

1. Individual Level

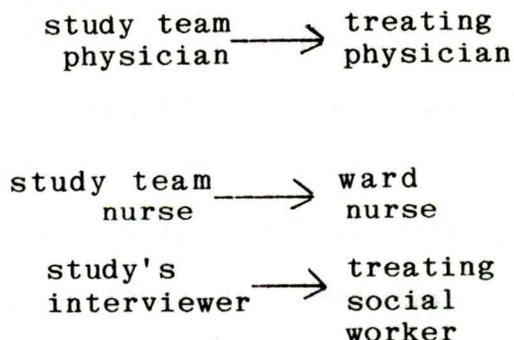
(a) Interviews with and examinations of the elderly residents



(c) Review of clinical files

study team physician
study team nurse

(b) Interview with staff about each elderly resident

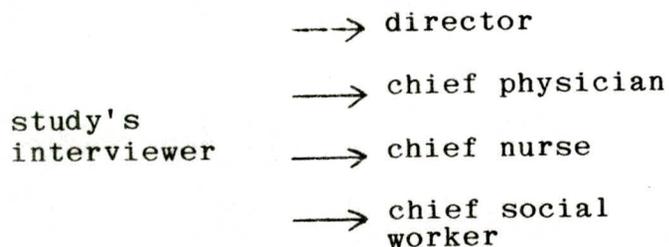


(d) Review of social files

study's interviewer

2. Ward Level

(a) Interviews with staff about policies, regulations, and work organization in the institution



(b) On-site observations of staff-resident relations and institutional facilities

study's interviewer
study team nurse
study team occupational therapist

the study team physician, and the social worker or housemother by the study's interviewers; they were asked to describe the condition of each elderly resident regarding the tracers and the care delivered.

(c) The study team physician and nurse reviewed the medical records of each of the elderly residents.

(d) The study's interviewers reviewed the social records of each of the elderly residents.

2. The ward or institutional level

(a) The head physician, head nurse, head social worker, and director of the institution were interviewed by the study's interviewer about policies, responsibility, regulations, and work organization in the institution.

(b) The study team nurse, occupational therapist, and interviewers recorded on-site observations of staff-resident relations and institutional facilities.

Chapter 4: Structural Measures⁴

Institutional structure can be addressed in two ways: a) by examining an institution's general structure, including staffing ratios, services provided, and living conditions; and b) by examining structural elements related to specific tracers, such as on-going contact between the institution and an eye specialist, and established procedures for routine blood-pressure measurements.

The general structural variables examined were staffing ratios, existence of health services and social and cultural activities, living conditions, safety measures, and medical recording. A great number of shortcomings were found in these areas.

Only four of the nine units studied met the standards for registered nursing manpower set by the Ministry of Labor and Social Affairs and the Ministry of Health (Committee for Examining Needs and Costs in Old Age Homes, 1981).

The types of health services provided varied greatly among the units. All except one offered physiotherapy, but only two offered occupational therapy and only one provided speech therapy. Usually, close contacts were not maintained with specialists outside the institutions. Thus, for example, no regular contacts were maintained between the units and a urologist or an orthopedist, and only three units maintained regular contacts with a diabetes specialist.

Only two units employed social workers, and social and cultural activities took place regularly in only four units.

⁴ For a discussion of the effects of structural elements on the quality of institutional life, see Moos and Lemke, 1979, 1980; and Moos and Igra, 1980.

Living conditions in the various units also differed to a great extent. Room density ranged from 1.18 sq.m. per person in a crowded nursing unit to 16.7 sq.m. per person in a spacious unit for independents - a ratio of 16 to 1. Four units were found to be particularly sub-standard in room density. Other aspects of living conditions also varied widely among the units: adaptation of the room to an elderly person's needs (e.g., minimal maneuvering space for residents in wheel chairs), furniture and equipment (most nursing units do not provide residents with closets for clothes and personal effects), and the condition of bathrooms and showers. Safety conditions were evaluated by the study team occupational therapist using an 11-item scale. The safety conditions in five units were found to be satisfactory; serious safety breaches were found in the remaining four.

Medical recording in the units was assessed by the study team doctor. The record keeping of only three of the nine units in the sample was judged to be adequate. Good units tended to keep better records than poor units.

The "good" units were found to meet more of the structural standards than did the "poor" units. A summary index based on the various structural components (excluding health services and social and cultural activities) shows a significant gap between the "good" and the "poor" units (an average of 90.3 versus 59.2 respectively, out of a range of 0 to 100 possible points - see Table 3). It is important to note that "good" nursing units employed 100% of the manpower recommended by government standards, whereas "poor" nursing units employed only 63% of the recommended number of nurses. Smaller

Table 3: Structural Indicators, by Type and Quality^a of Ward
(percentages of maximum scores)

Structural Indices	Nursing			Frail & Independent			All	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
Nursing manpower ^b	100.0	63.0	86.0	75.7	70.6	72.7	96.8	66.7
Living conditions ^c	59.9	49.4	54.0	95.1	48.2	76.4	87.3	48.6
Safety ^d	82.6	76.3	79.1	100.0	58.6	83.5	96.1	65.0
Medical record keeping ^e	72.7	55.9	62.1	84.3	57.0	73.5	81.0	56.4
Summary structural index ^f	78.8	61.2	70.3	88.8	58.6	76.5	90.3	59.2

^a According to the assessments by national supervisors.

^b Percentage of existing nursing manpower, compared with the number of nursing staff recommended by the government (Ministry of Health and Ministry of Labor and Social Affairs).

^c Living conditions in the units were measured using an 11-item scale. 100% represents adequate living conditions for all items.

^d Safety in the wards was measured using an 11-item scale. 100% represents maximum safety.

^e The scores were calculated by totalling the scores for quality of medical record keeping (0=poor records, 1=mediocre records, 2=good records) and were expressed in percentages of the maximum possible score for a ward: the maximum score is 2 X the number of residents in the ward.

^f An arithmetic average of the above-mentioned structural indices.

differences were found among the frail and independent units (76% in the "good" units versus 71% in the "poor" units).

Large differences between the "good" and "poor" units were also found in the area of living conditions (87 out of 100 possible points were given to the "good" units and only 49 out of 100 to the "poor" units). On the 11-point safety scale, the "good" units received 96% of the maximum points and the "poor" units received only 65% of the maximum.

Institutional structure was also examined through individual tracers. For each tracer a number of relevant structural elements were defined (e.g., regular contact between the institution and an ophthalmologist related to the vision difficulty tracer; the existence of physiotherapy services - for the elderly who need them - related to the tracers of difficulty in walking, washing, and dressing).

An examination of the structural components related to the medical tracers showed that all or most units were deficient in structural components related to vision, hearing, and oral health problems. The structural components related to loneliness were deficient in most units, while the structural components related to the nursing tracers were found to be satisfactory in most units. (For detailed tables on each tracer, see Tomer and Fleishman, 1984).

Chapter 5: Prevalence of Tracers

The starting point for assessing quality of care is to establish the prevalence of tracers or problems.

As noted earlier, the medical, nursing, or psycho-social problems of elderly residents may, in some cases, result from inadequate preventive efforts or inadequate treatment. For example, the fact that residents suffer from feelings of loneliness immediately after admission to an institution may derive from the failure of the institution to ease the difficult transition from familiar surroundings to a new environment that might not respond to each resident's special needs. Although a high prevalence of loneliness may indicate poor quality of care, it is important to note that even institutions with excellent quality of care cannot always prevent or solve a problem such as loneliness, especially if residents were lonely when admitted to the institution. Moreover, prevalence of tracers is not always an adequate measure of quality of care. For example, treatment of hypertension is aimed at stabilizing the patient, not necessarily at curing him completely. Even in cases where prevalence is not a direct measure of quality, measures of prevalence are necessary for determining the extent of staff awareness of the existence of problems.

Data on the prevalence of medical, nursing, and psycho-social problems are vital for understanding residents' needs. In addition, these data may assist in reevaluating the definitions currently employed for classifying elderly patients by functional level.

Prevalence of tracers by type of ward and by ward quality is presented in Table 4. (See Appendix for definitions of tracers).

Table 4: Prevalence of Tracers by Type and Quality^a of Ward (percentages)^b

Tracer	Nursing			Frail and Independent			All	
	Good N=25	Poor N=24	Total N=49	Good N=51	Poor N=36	Total N=87	Good N=76	Poor N=60
1. Hypertension ^c	41.0	50.0	46.1	35.6	40.9	37.7	36.8	44.1
2. Vision difficulties (incl. blindness)	50.7	70.8	62.7	61.8	68.7	64.5	59.6	69.5
3. Hearing difficulties (incl. deafness)	58.1	37.5	46.5	61.4	51.5	57.4	60.6	46.5
4. Oral health problems, total ^d	77.3	100.0	90.1	71.0*	96.6*	81.2	72.4*	97.8*
a. Edentulous, no dentures	18.9	40.9	31.1	7.0	20.4	12.2	9.5*	27.5*
b. Defective dentures ^e (of those with dentures)	34.1*	87.5*	58.9	57.3*	97.5*	69.1	54.0*	95.0*
c. Decayed natural teeth (of those with natural teeth)	65.6	100.0	81.8	36.5*	77.3*	53.0	43.1*	83.7*
d. Oral mucosal diseases ^f	43.1	50.0	47.0	38.0*	81.7*	55.5	39.1*	70.3*
e. Poor oral hygiene	32.1	57.9	45.5	11.6*	80.8*	39.2	16.0*	73.8*
5. Mobility problems								
a. Need help	40.0	50.0	45.7	38.4	45.1	41.1	38.8	46.9
b. Bed-ridden or chair-bound	49.9	41.6	45.2	1.4	11.5	5.5	12.2	22.3
6. Difficulty in washing (need help)	100.0	100.0	100.0	45.7*	74.9*	57.4	57.8*	83.9*
7. Difficulty in dressing (need help)	85.3	81.0	83.0	18.3	24.5	20.8	33.4	43.1
8. Difficulty in brushing teeth (need help)	79.8	91.7	86.5	14.2*	45.6*	26.8	28.8*	62.2*
9. Urinary incontinence ^g , total	72.8	75.0	74.0	24.3	41.7	31.3	35.1*	53.7*
a. Partial incontinence	17.1	20.8	19.2	21.7	17.2	19.9	20.7	18.5
b. Total incontinence, w/o catheter	18.1	20.9	19.6	1.2	16.9	7.5	5.0	18.3
c. Total incontinence with catheter/penrose	37.6	33.3	35.2	1.4	7.6	3.9	9.5	16.9
10. Feelings of loneliness ^h	46.5*	83.3*	67.3	46.1	64.8	53.6	46.2*	71.5*
11. Lack of autonomy ⁱ	18.3*	88.9*	55.6	8.4*	34.3*	17.7	9.6*	46.2*

^a According to the assessments by national supervisors.

^b Percentage of elderly persons suffering from the problem, of total number of elderly in each ward.

^c Systolic bp of 160mmHg or more, or diastolic bp of 95mmHg or more.

^d Including those suffering from at least one of the problems listed.

^e An impairment in at least one of the following: vertical dimension, occlusion, stability, retention.

^f Ulcerative lesions, white lesions, developmental conditions, degenerative conditions, proliferative lesions (Kramer et al., 1980).

^g Including those suffering from at least one of the problems listed.

^h Based on three items: feeling of loneliness, feeling of boredom, and existence of a confidant.

ⁱ Based on scales measuring extent of residents' privacy and ability to use institutional facilities. Lack of autonomy: resident indicated limitations in 50% or more of the items in both scales.

* The difference between percentages of "good" and "poor" wards within type of ward and by ward type. Significant by Alpha=0.05 in a Chi Square test.

A number of findings deserve special emphasis. A high prevalence of function-related tracers (mobility problems, difficulty in washing and dressing, incontinence) was found, as expected, in nursing wards, as opposed to independent and frail wards. This trend remained constant even when controlling for the ward's quality. At the same time, the prevalence of these tracers in independent and frail wards was far from negligible (57% for "difficulty in washing"). The percentage of residents in need of mobility assistance among independent and frail elderly was also quite high (41%), and up to a third of them suffered from partial or total urinary incontinence.⁵

Turning to tracers related to medical care, high percentages of residents suffering from vision problems were found among elderly in all types of wards (60% in the "good" wards and 70% in the "poor" ones). Similarly high percentages were found for hearing problems (61% in the "good" wards and 47% in the "poor" wards). Regarding hypertension (systolic \geq 160 mmHg or diastolic \geq 95 mmHg), the difference in prevalence found between "good" and "poor" wards was small (37% in the "good" wards versus 44% in the "poor" ones). The high prevalence of oral health problems is noteworthy, especially the problem of defective dentures (54% of denture wearers in the "good" wards and 95% of denture wearers in the "poor" wards had defective dentures).

Almost half the residents in the "good" wards and nearly three-quarters of the residents in the "poor" wards suffered from feelings

⁵ The high percentage of residents whose functional level is low in the wards for independent elderly suggests that they may not be receiving the services they need.

of loneliness. A large difference was found between the percentage of residents suffering from lack of autonomy in the "good" wards as opposed to the "poor" wards (10% versus 46%). As expected, rates for lack of autonomy were higher in the nursing wards, even when controlling for the ward's quality.

The relationship between tracer prevalence and demographic variables, including age, sex, and origin, was examined.⁶ A positive significant correlation was found between the prevalence of vision problems, hearing problems, mobility problems, and age. A similar trend, though non-significant, was found regarding the relation between difficulty in washing or dressing and age. The findings regarding the relationships between these tracers and age are similar to those found in other studies.⁷ The variable of sex was found to be related only to problems of oral health. Poor oral hygiene, oral mucosal diseases, and defective dentures were found to be more prevalent among men than among women. These aspects of oral health were also found to be more prevalent among Asian-Africans than among those of Western origin. Similar relationships between oral health problems and sex and origin were found in a study of a Jerusalem community by Fleishman and Peles (1983).

⁶ Background characteristics of residents (age, sex, and origin) were found to vary greatly among the units examined in the sample. The percentage of residents of European origin ranged from 33% to 100%; the percentage of women from 60% to 94%, and the average age from 76 to 88.

⁷ Regarding vision, see: Davies et al., 1979; Kark et al., 1979; Zilberstein et al., 1981; and Gofin et al., 1981. Regarding hearing, see Kark et al., 1979; Davies et al., 1979; and Gofin et al., 1981. Regarding mobility, see Weihl et al., 1970; Factor et al., 1985; Weihl and Gether, 1973; Davies et al., 1979; Barel et al., 1981; and Zilberstein et al., 1981. Regarding washing and dressing difficulties, see Weihl, 1970; and Weihl and Gether, 1973.

Table 5 compares the prevalence rates of the tracers used in this study with those found in other studies in Israel and abroad. The definitions vary somewhat and the data should, therefore, be treated with caution. In the present framework, it is not possible to undertake a detailed analysis of the differences between the various studies; instead, a general picture of their findings is presented.

Three types of elderly populations were compared: independent residents in old age homes; nursing patients in hospitals, institutions, or nursing wards; and elderly persons living in the community. Data from this study resemble that of other studies, in particular with respect to hypertension, vision difficulties, difficulty in dressing and difficulty in washing. The rates for hearing and mobility problems found in this study are at the high extreme of rates reported in other studies. Rates for urinary incontinence are consistent with those found by other studies for old age homes, and higher than the reported rates for nursing institutions. The findings from this study were very similar to those from other countries regarding feelings of loneliness by residents of old age homes; the rate was higher, however, than that found in an Israeli study by Weihl et al., (1970) which used a different methodology.

Table 5: The Prevalence of Tracers in Studies of Institutional and Community Care

	Present Study		Other Israeli Studies			Studies in Other Countries (U.S., England, Iceland, Scandinavia)		
	Nursing	Independent and Frail	Old Age Homes ^b	Nursing Homes ^c	Community ^d	Old Age Homes ^e	Nursing Homes ^f	Community ^g
Hypertension	41-50	36-41	-	-	41-49	-	-	30-50
Vision problems	51-71	62-69	23 ^h	-	49-60	-	51-70	14-23
Hearing problems	58-38	61-52	16 ^h	-	24-40	27-51	28-33	27-50
Oral health problems	77-100	71-97	-	-	64-96	-	41-80	78-91
Mobility problems ⁱ	90-92	40-56	30	89	11-58	44	51-88	3-50
Difficulty washing	100-100	46-75	35	90	14-36	80	94-97	3-20
Difficulty dressing	85-81	18-25	23	90	11-21	32	80-84	3-5
Urinary incontinence: ^j	73-75	24-42	-	-	7-14	26-38	55-59	10-20
Total	56-54	3-25	-	-	3	14-19	23-47	5-6
Partial	17-21	22-17	-	-	4-14	9-24	26	12-44
Loneliness ^k	47-83	46-65	25-42	-	3-70	33-74	49	12-28

^a For the present study, the first figure refers to the "good" wards and the second to the "poor" wards, according to the assessments by supervisors. The other pairs of figures represent the ranges within the studies compared.

^b Wehl et al., 1970.

^c Motlis, 1976.

^d Factor et al., 1985; Fleishman et al. (1985a, 1985b); Fleishman and Peles, 1983; Fleishman, 1983; Wehl, 1982; Davies and Fleishman, 1981; Zilberstein et al., 1981; Davidof and Levy, 1979; Davies et al., 1979; Kark et al., 1979; Silverberg et al., 1979; Wehl and Berman, 1977; Cohen and Morginstin, 1976; Rosin and Galinsky, 1975; Wehl and Gether, 1973; and Ben-Zimra, 1970.

^e Corbin, et al., 1984; McCoy, 1982, Gilleard, 1980; and Hood, 1976.

^f McCoy, K., 1982; Fawcus, 1971; U.S. DHEW, 1975; National Center for Health Statistics, 1973; Drake, 1970; and Grintzig, 1970.

^g Fischer and Phillips, 1982; Svanborg et al., 1982; Kalimo, 1980; McWilliam, 1978; Christensen, 1977; Garbus and Garbus, 1976; Gruer, 1975; Bennett, 1973; National Center for Health Statistics, 1973; Townsend, 1973; Bennett et al., 1970; and Brocklehurst, et al., 1968.

^h Severe problems only.

ⁱ Including bedridden or chairbound.

^j With or without catheter.

^k Including lack of close friends, social isolation, boredom.

Chapter 6: Staff Awareness of Residents' Problems

The use of several sources of information provided an opportunity to measure the gap between the results of examinations or resident interviews carried out by the research team and the residents' conditions, as defined by the institutional staff (doctor, responsible nurse, social worker). Cases in which the research team identified a resident as suffering from a problem that was not reported by the institutional staff were defined as cases of staff unawareness. Whenever possible, two different staff members were asked about a problem in order to measure awareness more accurately.

Data on staff awareness of problems, reported in Table 6, must be interpreted carefully. First, it is possible that some of the study team's diagnoses were mistaken. Second, in a small percentage of cases, the gap between the study team's results and institutional staff's reports may derive from different means of assessment or different definitions, rather than from a lack of awareness by institutional staff. For example, some of the cases in Table 6 which appear to indicate a lack of awareness by physicians of the existence of hypertension are, in fact, cases in which the physician is aware of a blood pressure problem but does not regard it as a pathological condition which needs treatment.⁸ Such cases may cause an upward bias, that is, unawareness rates which are higher than the "real" rates. In nursing wards, on the other hand, interviews with residents

⁸ This study used the World Health Organization (WHO) definition, which defines hypertension as systolic b.p. > 160 mmHg or diastolic b.p. > 95 mmHg. (World Health Organization, 1978; and Hart, 1982).

Table 6: Staff Awareness of the Existence of Problems, by Type and Quality^a of Ward (Percentages)^b

Tracer	Nursing			Frail & Independent			All	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
1. Hypertension								
Physician's unawareness	24.7	49.9	40.2	56.2	40.0	49.1	48.2	44.0
2. Vision difficulties								
Physician's unawareness	82.1	58.8	66.4	77.5	57.3	69.2	78.2	57.9
Nurse's unawareness	33.1	47.1	42.5	59.2	47.0	54.1	54.7	47.0
3. Hearing difficulties								
Physician's unawareness	60.6	77.7	68.4	80.5	84.1	81.8	76.2	82.3
Nurse's unawareness	64.7	66.6	65.6	69.6	57.9	65.4	68.6	60.5
4. Oral health problems								
Physician's unawareness	62.7*	100.0*	86.1	56.1*	98.5*	76.3	57.6*	99.1*
5. Mobility problems								
Physician's unawareness	0.0	27.3	16.2	17.9	57.2	35.3	10.3*	39.8*
Nurse's unawareness	10.7	22.7	17.7	20.5	22.9	21.7	16.8	22.8
6. Difficulty in washing								
Nurse's unawareness	0.0	0.0	0.0	9.7	0.0	5.7	6.7	0.0
7. Difficulty in dressing								
Nurse's unawareness	0.0	(23.0) ^c	8.8	33.3	(50.0)	40.1	15.0	37.7
8. Difficulty in brushing teeth								
Nurse's unawareness	(0.0)	33.3	26.0	(41.8)	(50.0)	44.9	30.9	38.8
9. Urinary incontinence								
a. Total								
Physician's unawareness	16.5	7.7	11.6	0.0	41.4	34.5	14.1	21.0
Nurse's unawareness	0.0	7.7	4.3	0.0	27.5	23.7	0.0	16.6
b. Partial								
Physician's unawareness	73.2	60.0	65.1	100.0	91.8	97.2	95.1	78.9
Nurse's unawareness	73.2	60.0	65.1	80.0	75.3	78.4	78.7	69.1
10. Feeling of loneliness								
Social worker's unawareness	82.9	65.0	70.4	61.4	59.2	60.3	66.3	61.6
Nurse's unawareness	68.4	55.0	59.0	91.2	71.3	81.6	86.1	64.4

^a According to the assessments by national supervisors.

^b Percentage of residents with problems about which the institutional staff (physician, responsible nurse, social worker) is unaware, of the total number of residents suffering from this problem in each ward.

^c Parentheses indicate that the number from which the percentage was calculated was smaller than 5.

* The difference between percentages which refer to "good" or "poor" wards, within type of ward and across ward types, is significant by Alpha = .05 in a Chi Square test.

were used to a lesser extent (since some residents could not be interviewed), and this may have resulted in a lower unawareness rate than the "real" one for these wards.

The rate of unawareness was found to be high (about 50% or more) for a number of tracers in both "good" and "poor" wards. Physicians were largely unaware of residents' vision, hearing, and oral health problems and partial incontinence. The responsible nurse was also unaware, in a large percentage of cases, of residents' vision problems, hearing problems, partial incontinence, and feelings of loneliness. A high rate of unawareness (in about two-thirds of the cases) of loneliness was found among social workers (or house mothers). Especially surprising is the fairly high rate of unawareness found regarding total urinary incontinence. Physicians were unaware of 14% of the cases in the "good" wards and 21% of those in the "poor" wards. Higher awareness rates were found among the responsible nurses: in the "good" wards they were aware of all cases of total urinary incontinence and in the "poor" wards they were unaware of only 17%. The rate of unawareness was lower among the responsible nurses regarding mobility problems and difficulty in washing, dressing, and brushing teeth (ranging from 7% to 31% in the "good" wards and from 0% to 39% in the "poor" wards).

In general, there is no consistent relationship between unawareness rates and the supervisors' assessments of ward quality. Significant differences between the "good" and "poor" wards were found only with regard to mobility and oral health problems. A fairly consistent pattern of higher awareness by staff (excluding oral health problems, hearing difficulty, and loneliness) was found in the nursing

wards, as opposed to the independent and frail wards, perhaps because the nursing ward staff is in closer contact with the residents. Regarding most tracers, there were no differences in staff awareness by age, sex, and origin of the elderly.

The importance of the awareness findings lies in the fact that if a problem is not known to the staff, they obviously cannot be expected to treat it. Further, awareness of residents' problems may promote better relationships between caregivers and residents, even for cases that do not lend themselves to treatment. For example, a nurse who is aware of a resident's hearing difficulties will not react with impatience and annoyance if the resident fails to respond when addressed.

Unawareness can result from any of the following conditions:

- Poor relationships between residents and staff.
- Feelings of fear or embarrassment, which prevent residents from reporting certain problems (such as incontinence "accidents").
- Physician's or staff's definition of certain problems as "not within my province" (e.g., vision difficulties, hearing difficulties, or oral health problems).
- A general feeling among the staff that the institution is not responsible for certain areas of care (such as fitting residents for dentures or replacing defective dentures).
- An assumption by the staff that certain problems are of little importance (vision, hearing, oral health).
- An assumption by the staff that certain problems are either untreatable or unavoidable (loneliness, partial incontinence).
- Lack of sufficient manpower in the institution.

Chapter 7: Treatment of Residents' Problems

The major findings regarding treatment⁹ of problems are presented in Table 7. The rates of treatment are calculated in relation to the total number of residents suffering from a particular problem. Regarding hypertension and loneliness, the care of which has preventive significance, the percentages are based on the total number of residents.

The findings show, almost without exception, that more care was given in the "good" wards. Rates for inadequate follow-up; hypertension; lack of treatment for difficulties in washing, dressing, and mobility; and loneliness were lower in these wards than in the "poor" wards. Moreover, the residents' autonomy levels were higher in the "good" wards. Nevertheless, there were a few areas, such as vision, hearing, oral health and incontinence, which were generally neglected. The rates for lack of treatment in these areas were usually 50% or more in the "good" wards and 75% or more in the "poor" wards. Significant relationships were not found between treatment of the problems and the age, sex, and origin of the elderly residents.

We now turn to a detailed analysis of treatment rates for the various tracers.

Follow-up of hypertensive residents was found to be inadequate in 34% of the cases in the "good" wards and in 75% of the cases in the "poor" wards. From a preventive care perspective, it is desirable to

⁹ "Treatment" signifies (a) the existence of treatment, the indicators being process measures such as specialist visits; (b) adequacy of treatment, the indicators being outcome measures such as unsuitable glasses, deteriorated oral hygiene, or an unsatisfactory state of cleanliness.

Table 7: Treatment of Problems, by Type and Quality^a of Ward (Percentages)^b

Tracer	Nursing			Frail & Independent			All	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
1. Hypertension								
Inadequate follow-up of hypertensive residents ^c	22.4	75.0	54.6	38.3	75.2	54.5	34.2*	75.1*
Inadequate follow-up of residents not suffering from hypertension ^d	31.1	75.0	54.0	38.3	30.9	35.4	36.6	45.6
2. Vision difficulties								
Resident did not visit a specialist in past year	58.7	86.7	76.8	29.4	44.0	35.6	34.5*	58.9*
No solution to vision problem (no eyeglasses or unsuitable eyeglasses)	68.4	93.7	82.9	61.6	83.4	69.3	62.7*	86.8*
3. Hearing difficulties								
Resident did not visit specialist in past year/not treated	100.0	100.0	100.0	59.5*	97.2*	73.5	68.1*	98.0*
4. Oral health problems								
Resident receives no oral treatment	95.4	91.3	92.8	83.5	98.5	90.7	86.3	96.0
Deteriorated oral hygiene ^e	30.4	58.8	45.7	12.3*	87.7*	59.7	21.9*	75.0*
5. Mobility problems								
Resident receives no help ^f	12.9	71.5	43.2	35.9	47.2	40.4	30.6	55.0
Resident receives no treatment ^g	24.5*	100.0*	63.8	55.8	91.0	74.2	41.7*	95.0*
6. Difficulty in washing								
State of cleanliness unsatisfactory (according to defined criteria)	39.2	70.8	57.7	19.7*	77.5*	50.9	27.2*	74.6*
Resident receives no help washing	0.0	0.0	0.0	6.8	0.0	3.3	4.3	0.0

^a According to the assessments by national supervisors.

^b Percentage of untreated residents, of all residents diagnosed as suffering from the problem in each ward (unless otherwise indicated).

^c A gap of over two months between two blood pressure measurements.

^d A gap of over three months between two blood pressure measurements

^e Of all residents who have difficulty brushing their teeth.

^f Of all residents who have mobility difficulties but are not in a wheel chair.

^g Of all residents who have mobility difficulties and need treatment (mainly physiotherapy).

* The difference between percentages relating to "good" wards, as opposed to those relating to "poor" wards, within ward type and covering all types, is significant by Alpha = 0.5 in a Chi square test.

Table 7, continued

Tracer	Nursing			Frail & Independent			All	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
7. Difficulty in dressing								
Condition of clothing unsatisfactory	21.8*	70.6*	48.3	0.0*	44.9*	21.3	12.0*	60.8*
Resident receives no help dressing	0.0	5.9	3.2	17.2	19.6	18.3	7.7	11.1
8. Difficulty in brushing teeth								
Resident receives no oral nursing care	22.6	36.4	30.9	100.0	70.4	78.7	49.0	52.4
9. Incontinence								
No rehabilitation programs	55.0	88.9	74.4	90.0	100.0	95.3	73.8	94.4
10. Feeling of loneliness								
Resident does not participate in activities ^h	46.5*	87.5*	69.7	19.2*	53.8*	33.0	25.3*	65.9*
No meetings ⁱ between residents' families ^j and staff	50.0	22.7	33.7	74.1*	50.0*	63.9	69.0*	40.4*
Not treated/almost not treated ^k (percentage of all residents)	68.5	90.9	81.9	57.9	72.2	64.0	60.1*	78.7*
11. Autonomy								
Grade of lack of autonomy ^l	45.8*	63.8*	55.3	15.6*	32.0*	21.5	19.3*	38.9*
12. Dissatisfaction ^m (full or partial)	52.4	57.2	55.3	23.0*	64.9*	37.7	26.9*	62.6*

^h Activities do not including watching television.

ⁱ The resident's family met with institutional staff two times or less during past year.

^j Of residents who have families.

^k Residents were defined as untreated if none of the following three conditions was met:
a) resident participates in activities; b) resident's family meets with institutional staff members;
c) resident receives individual care by the social worker. If only one of these conditions was met, the resident was defined as "almost not treated".

^l Scores were calculated on the basis of residents' responses to questions concerning autonomy. The scores were based on the percentage of items in which residents cited restrictions on their autonomy (out of the total number of items mentioned by the interviewer). Scores for each ward were calculated using the average scores of residents.

^m Percentage of residents who said they were dissatisfied or not very satisfied with life in the institution.

* The difference between percentages relating to "good" wards, as opposed to those relating to "poor" wards, within ward type and covering all types, is significant by Alpha = 0.5 in a Chi square test.

regularly measure the blood pressure of all residents. Follow-up of residents not suffering from hypertension was inadequate in 37% of the cases in the "good" wards and 46% in the "poor" wards.

Of residents with vision problems, 63% in the "good" wards and 87% in the poor wards either had no eyeglasses or had eyeglasses which did not improve their vision. (It was assumed that the vision of most of these residents would have improved with proper eyeglasses). The situation was particularly critical in the "poor" nursing wards, where 94% of all residents with vision problems had no eyeglasses or had unsuitable eyeglasses. A high rate of lack of treatment for oral health problems was also found - 86% in the "good" wards and 96% in the "poor" wards. The hearing problems of nursing patients received no attention. No nursing patient in either the "good" or "poor" wards had been seen by an ear specialist in the past year.

Regarding mobility problems, over 40% of the disabled residents in the "good" wards and about 95% of those in the "poor" wards did not receive the necessary rehabilitative treatment; the team physicians' assessment was that such treatment would be beneficial.

For both washing and dressing, there were clearly defined process and outcome measures. Almost all residents who had difficulty washing received help, and only about 10% of those who had difficulty dressing did not receive help. Yet cleanliness was found to be inadequate in 75% of the cases in the "poor" wards and in 27% of the cases in the "good" wards. Clothing conditions were inadequate in 61% of the cases in the "poor" wards and in 12% of the cases in the "good" wards. The discrepancy between the process measures (receiving help) and the outcome measures of treatment for difficulty in washing and dressing (cleanliness and clothing conditions) suggests that the help given in

those areas was either inadequate or not frequent enough.

Oral hygiene care for those residents who need it was also found to be inadequate. In the "poor" wards, three quarters of these residents suffered from deteriorated oral hygiene; in the "good" wards the rate was 22%.

Rehabilitation programs for incontinent residents were found to be seriously lacking (74% of the incontinent elderly in the "good" wards and 94% in the "poor" wards had no such programs available to them). This contrasts sharply with the substantial improvement in this area in high quality institutions throughout the Western world (Willington, 1976).

In a number of units, many residents appeared to be suffering from psycho-social problems. Lack of autonomy, defined as the extent to which institutional regulations limit residents' freedom and privacy in everyday institutional life, was found to be fairly high, on average. Extent of autonomy was based on residents' perceptions of restrictions in a number of daily activities, including use of the institution's refrigerator and the preparation of hot drinks. Forty percent of the everyday activities discussed in the interviews with residents in the "poor" wards were reported as restricted. The parallel rate in the "good" wards was 19%. Conditions were found to be particularly bad in the nursing wards (64% of activities were restricted in the "poor" wards and 46% in the "good" wards). "Objective" conditions that restrict autonomy, such as crowded rooms or deteriorated functional status of residents, may be considered unavoidable by the staff. It is possible, however, to ensure a minimum amount of privacy using various methods (some of them fairly

inexpensive) such as putting up screens between beds. It is also possible to allow freer use of institutional facilities and services (Seligman, 1975; Schulz, 1976).

Regarding feelings of loneliness, it was found that 25% of the residents in the "good" wards and 66% of those in the "poor wards" do not participate in activities. In the "poor" wards, this is primarily due to a lack of social activities. Rates for lack of participation are particularly high among the nursing residents (47% in the "good" wards and 88% in the "poor" wards).

Meaningful and ongoing contacts between institutional social workers and the residents' families are especially important for ensuring a reasonable quality of life for residents (Rook and Peplau, 1982; Weiss, 1982; Montgomery, 1982). Institution directors reported a policy of nurturing these contacts, but it was found that for 69% of the residents with families in the "good" wards, staff members meet only infrequently with the families (two meetings or less during the past year). This rate declines to 40% in the "poor" wards, possibly due to the fact that residents whose health status is poor receive more family visits than do residents who are relatively healthy.

The residents' general satisfaction with institutional life, although not a tracer, was examined, since it can reflect the quality of care and life in the institution. Among the independent and frail elderly, the rate of dissatisfaction was much higher in "poor" than in "good" wards (about two-thirds in the "poor" wards were generally dissatisfied with institutional life, as opposed to 23% in the "good" wards). Among nursing elderly, rates of dissatisfaction were high in both "good" wards (52%) and "poor" wards (57%).

Chapter 8: An Overall View of Quality of Care

The tracer method is designed to measure overall quality of care based on an examination of a relatively small number of tracers representing wide areas of care. For each tracer, a number of indicators of quality were analyzed; only those which met the following criteria were chosen as recommended indicators.

- (a) The indicator reflects a problem which the institution is primarily responsible for treating. (Frequency of visits to specialists for treatment of hearing or vision problems, for example, would not be a suitable indicator in the independent wards, where the residents themselves often initiate the visits; in the nursing wards, on the other hand, responsibility for treatment lies, to a greater extent, with the institution).
- (b) The indicator is based on a relatively high frequency of cases. The most frequent problems of each unit can serve as a basis for constructing indices appropriate to each unit (for example, dressing and washing problems are more frequent among frail and nursing residents than among independent residents).
- (c) Reliable data are easily obtainable. (It is often difficult to obtain reliable data directly from nursing patients because of their poor functional and/or cognitive status).

In addition, three tests of validity were applied to each indicator:

- (a) The ability of the indicator to differentiate among wards. (For example, treatment of hearing problems was non-existent in nursing wards, thus preventing the use of this indicator).

- (b) The ability of the indicator to differentiate between "good" and "poor" wards, as previously assessed by the national supervisors.
- (c) A positive correlation with the general satisfaction variable for tracers that may affect the residents' satisfaction with institutional life and care.

Table 8 presents the recommended indicators for measuring quality of care, including the type of ward to which each indicator is suited, the sources of information on which the indicators are based, the source of the data, and the relationships with other variables that may be relevant for validating the indicators. For the mobility tracer, originally defined as a nursing tracer, a differentiation was made between the nursing aspect (help for those who have difficulty walking) and the medical aspect (rehabilitative care of the resident). Care for oral hygiene was classified within the nursing area. The psycho-social area included the overall satisfaction measure, as well as care for the problem of loneliness and the extent of autonomy. (Because there were virtually no rehabilitation programs for incontinent residents, no indicators were recommended for measuring the quality of care for this problem). Most of the chosen indicators differentiate between "good" and "poor" wards, and the psycho-social indicators are closely related to residents' satisfaction with institutional life. The ability of the recommended indicators to differentiate between "good" and "poor" wards is discussed later in this chapter.

Table 8: Recommended Indicators of Quality of Care for Each Tracer

Tracer	Indicator	Source of information	Study team member who gathered the information	Differentiation between wards ^a	Differentiation between "good" and "poor" wards ^a	Link with residents' general satisfaction		Ward for which indicator is suitable
						No	Yes	
1. Hypertension	Adequate follow-up of hypertensive residents.	-Blood pressure measurements noted in medical records. -Assessment by study team doctor based on medical chart and interview with institution's doctor.	Doctor Nurse	Yes	Yes	No		All
2. Vision difficulties	Combined awareness of medical staff (for residents with vision difficulties) ^b .	-Interviews with resident, responsible nurse, and institutional doctor. -Assessment by study team doctor.	Interviewer Nurse Doctor	No	No	No		All
3. Hearing difficulties	Combined awareness of medical staff (for residents with hearing difficulties) ^b .	-Interviews with institutional doctor and responsible nurse. -Examination by study team doctor.	Doctor Nurse	No	No	No		All
4. Oral health problems	Existence of satisfactory dentures (for denture wearers or edentulous residents).	-Examination by specialist. -Interview with resident.	Oral health specialist	Yes	Yes	No		All
5. Mobility problems	-Help in mobility (for residents with mobility problems who are not chairbound or bed-ridden).	-Interview with resident. -Examination of resident	Nurse	No	No	No		Mainly frail and disabled independent
	-Rehabilitative care (for residents with mobility problems who require care).	-Assessment by study team doctor. -Examination of resident.	Doctor	Yes	Yes	No		Mainly nursing and frail

^a Differentiation was said to exist when the difference between the wards was significant at a 5% level in a Chi-square test.

^b Combined awareness: both the institutional doctor and the responsible nurse were aware of these difficulties.

Table 8, continued

Tracer	Indicator	Source of information	Study team member who gathered the information	Differentiation between wards ^a	Differentiation between "good" and "poor" wards ^a	Link with residents' general satisfaction	Ward for which indicator is suitable	
6.	Difficulty in washing	Satisfactory cleanliness (of those who have difficulty washing).	-Examination by study team nurse. -Interviews with resident and responsible nurse.	Nurse	Yes	Yes	No	Mainly nursing and frail
7.	Difficulty in dressing	Satisfactory clothing (of those who have difficulty dressing).	-Examination by study's team nurse. -Interviews with resident and responsible nurse.	Nurse	Yes	Yes	No	Mainly nursing and frail
8.	Difficulty in brushing teeth	Good oral hygiene (of those who have difficulty brushing).	-Examination by oral health specialist. -Interviews with resident and responsible nurse.	Oral health specialist	Yes	Yes	No	Mainly nursing and frail
10. ^c	Feeling of loneliness	Existence of treatment (for lonely residents).	-Interviews with social worker and resident.	Interviewers	Yes	Yes	Yes	All
11.	Lack of autonomy	Extent (grade) of autonomy ^d .	-Interview with resident.	Interviewers	Yes	Yes	Yes	Mainly independent and frail
12.	General satisfaction	Satisfaction averages.	-Interview with resident.	Interviewers	Yes	Yes	Yes	All

^c As explained in the text, incontinence was not included in this list because of a lack of treatment programs.

^d The average percentage of items related to everyday life for which residents said that the institution poses restrictions (N=92).

The ultimate purpose of a quality of care study is to provide an overall view of the general quality of care in a sample of wards. In theory, the tracer approach can accurately assess overall quality by examining only a few aspects of care. To test this hypothesis, comprehensive indices based on the eleven recommended quality of care indicators were developed.¹⁰

Summary indices were developed for the medical, nursing and psycho-social areas of care. Each of the three summary indices was calculated as an arithmetic average of the recommended quality of care indices in the respective areas. Equal weights were given to the indicators within each area. An index of structural quality was also developed, including measures of nursing manpower, living conditions, safety, and medical record keeping (see Table 3). In addition to being relatively easy to quantify, these components were found to be relevant to more than one tracer. The index of structural quality was calculated as an arithmetic average of the scores for each component.¹¹

Two comprehensive quality of care indices were calculated. Comprehensive Index A was based on the three areas of care - medical, nursing and psycho-social. An additional comprehensive index (B) was calculated, taking into consideration the structural components as

¹⁰ There is no doubt that certain areas may be more relevant to the quality of institutional care than others. Quantification of the relative importance of different criteria will be the topic of a future study.

¹¹ Regarding manpower, a maximum score was obtained when the manpower in the ward was in accordance with (or on a higher level than) the optimal standard set by The Ministry of Health and the Ministry of Labor and Social Affairs. For safety and living conditions, the scales were based on scores reported in Table 3.

well. These comprehensive indices were calculated as an arithmetic average of the summary indices in each area.

The specific indicators and summary indices for each area of care by type of ward and by quality (according to the supervisors' assessments) appear in Tables 9 and 10. Units assessed as "good" usually scored relatively higher in the various areas. Comprehensive Index A (Table 10) is 70.6 for the "good" units and 40.6 for the "poor" units; summary indices for each area of care are also higher for the "good" units. A comparison of the quality of care in each unit according to the two comprehensive indices reveals that units which ranked high on one index also ranked high on the other. In fact, the ranking of units was identical for both indices. At the same time, an examination of the specific indicators of quality reveals that quality is not always higher in the "good" units; awareness of hearing and vision problems, in fact, is slightly higher in the "poor" units.

An examination of the summary indices in relation to each unit (Figure 3) shows that some areas in the "good" units exhibit relatively deficient quality of care compared with other "good" units. For example, in unit F (a "good" unit), the medical treatment was poor compared with that of the other "good" units. On the other hand, in unit A (a "poor" unit), where the quality of care was generally poor, the nursing care was found to be better compared with the other "poor" units. Therefore, it is advisable not to rely only on comprehensive assessments of quality of care, but rather to focus on the various care components and try to improve those components that are problematic.

Table 9: Recommended Medical, Nursing, and Psycho-Social Indicators by Type and Quality^a of Ward (%)

Indices	Nursing			Frail & Independent			All Residents	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
I. Medical Indicators								
Hypertension (follow-up) ^b	77.6	25.0	45.4	61.7	24.8	45.5	65.8	24.9
Vision difficulty (awareness) ^c	42.9	50.0	45.7	30.6	50.0	37.9	34.1	46.3
Hearing difficulty (awareness) ^c	40.0	31.3	33.3	23.6	32.5	25.9	27.2	30.4
Oral health problems (treatment/denture repair) ^d	42.8	7.2	25.2	45.8	1.8	28.5	45.2	3.3
Mobility problems (treatment) ^e	75.5	0.0	36.2	44.2	9.0	25.8	58.3	5.0
Summary medical index ^f	55.8	22.7	37.2	41.2	23.6	32.7	46.1	21.9
2. Nursing Indicators								
Mobility problems (help) ^g	87.1	28.5	56.8	64.1	52.8	59.6	69.4	45.0
Difficulty washing (cleanliness) ^h	60.8	29.2	42.3	80.3	22.5	49.1	72.8	25.4
Difficulty in dressing (satisfactory clothing) ⁱ	78.2	29.4	51.7	100.0	55.1	78.7	88.0	39.2
Difficulty in brushing teeth (acceptable hygiene) ^j	69.6	41.2	54.3	87.7*	12.3*	40.3	78.1	25.0
Summary nursing index ^k	73.9	32.1	51.3	83.0	35.7	56.9	77.1	33.7

^a According to the assessments by national supervisors.

^b Percentage of cases where the follow-up of hypertensive residents was defined as adequate.

^c The score given to each ward was calculated on the basis of a summary of the scores of all residents (0=unawareness by doctor and nurse, 1=unawareness by one of them, 2=unawareness by both), and expressed as a percentage of the maximum possible ward score (which is 2 x the number of residents suffering from the problem in each ward).

^d The percentage of cases in which dentures were satisfactory, had been repaired, or were not recommended, of the total number of denture-wearers or edentulous residents.

^e Percentage of cases in which rehabilitative treatment was given to residents, of the total number of residents in need of such treatment.

^f Arithmetic average of medical indicators.

^g Percentage of residents who receive help with mobility, of all residents (who are not bedridden or chairbound) who have mobility problems and require care.

^h Percentage of residents with satisfactory cleanliness, of those who need help washing.

ⁱ Percentage of residents with satisfactory clothing, of those who need help dressing.

^j Percentage of residents with good oral hygiene, of the total number of residents (including independents) who have difficulty brushing their teeth.

^k Arithmetic average of nursing indicators.

* The difference between percentages for "good" and "poor" wards, within ward type, is significant by Alpha = 0.5 in a Chi-square.

Table 9, continued

Indices	Nursing			Frail & Independent			All Residents	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
3. Psycho-social indicators								
Feeling of loneliness (treatment) ¹	31.5	9.1	18.1	42.1	27.8	36.0	39.9	21.3
Lack of autonomy (degree of autonomy) ^m	54.2	36.2	44.7	84.4	68.0	78.5	80.7	61.1
General satisfaction ⁿ	75.0	53.8	59.5	89.8	60.3	78.5	86.5	60.7
Summary psycho-social index ^o	53.6	33.0	40.8	72.1	52.0	64.3	69.0	47.7

¹ Percentage of residents for whom at least two of the following conditions were met a) resident participates in activities, b) resident's family meets with institutional staff, c) resident receives individual treatment by the social worker.

^m The ward score were calculated by the average residents' scores. These scores were calculated based on residents' answers to autonomy-related items. The score of autonomy was defined by the percentage of items for which the resident mentioned no restrictions.

ⁿ Ward scores were calculated on the basis of the sum of the scores of all residents (0=dissatisfaction, 1=moderate satisfaction, 2=full satisfaction) and were expressed as a percentage of maximum possible satisfaction per ward.

^o Arithmetic average of psycho-social indicators.

* The difference between percentages for "good" and "poor" wards, within ward type, is significant by Alpha = 0.5 in a Chi-square.

Table 10: Summary Area Indices and Comprehensive Indices of Quality of Care, by Type and Quality^a of Ward

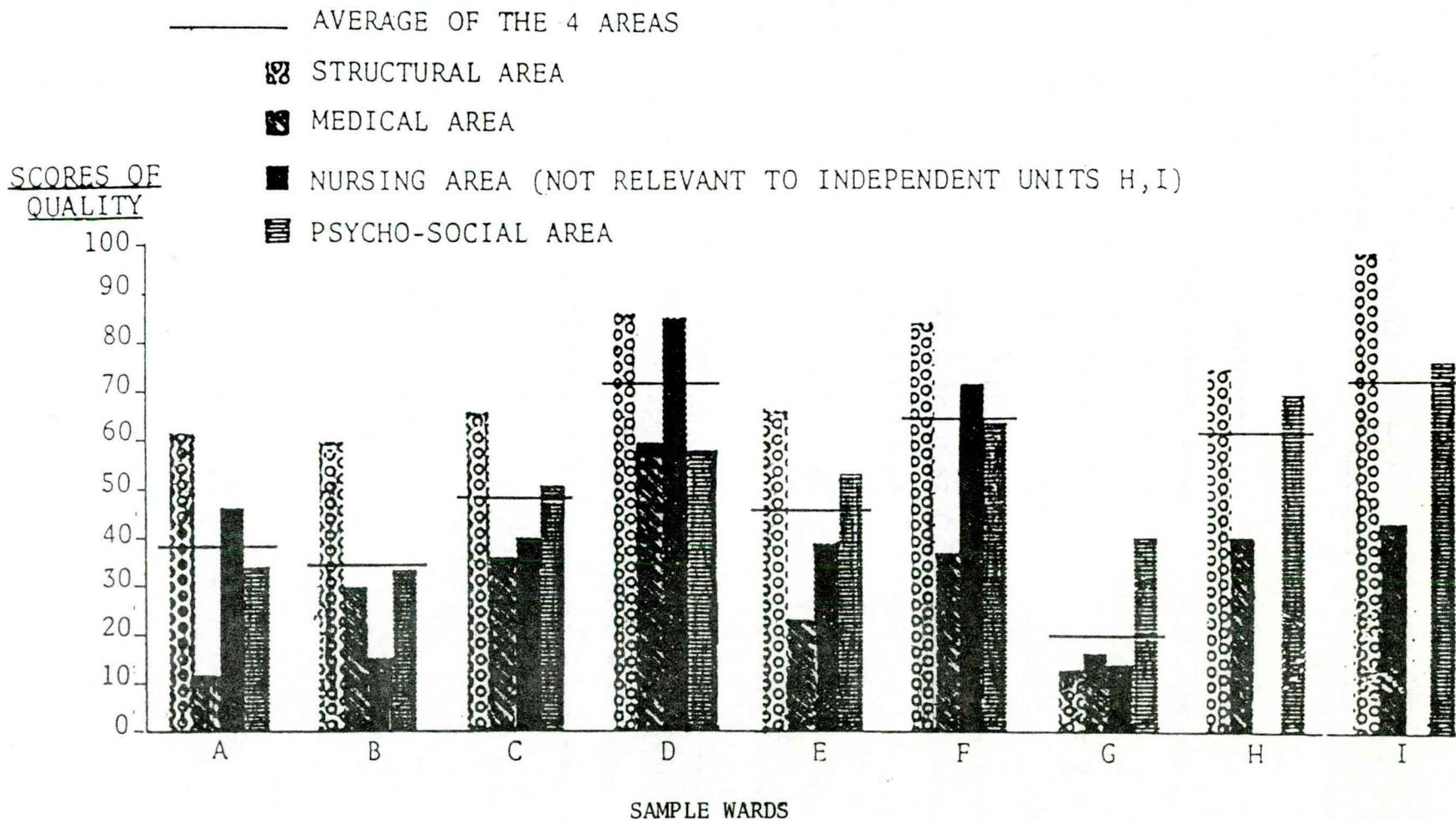
Indices	Nursing			Frail and Independent			All	
	Good	Poor	Total	Good	Poor	Total	Good	Poor
Summary medical	55.8	22.7	37.2	41.2	23.6	32.7	46.1	21.9
Summary nursing	73.9	32.1	51.3	83.0	35.7	56.9	77.1	33.7
Summary psycho-social	53.6	33.0	40.8	72.1	52.0	64.3	69.0	47.7
Summary structural	78.8	61.2	70.3	88.8	58.6	76.5	90.3	59.2
Comprehensive index A ^b	65.5	37.3	49.9	71.3	42.5	57.6	70.6	40.6
Comprehensive index B (not including structure) ^c	61.1	29.3	43.1	65.4	37.1	51.3	64.1	34.4

^a According to the assessments by national supervisors.

^b Arithmetic average of the first four indices.

^c Arithmetic average of first three indices.

Figure 3: Quality of Care Scores for Each Area of Care, by Ward



Although gaps between "good" and "poor" wards may reflect differences in the quality of institutional care, this is not necessarily so. The gaps may result from socio-economic differences between the populations of the "good" versus "poor" wards, which may affect the level of self-care. For example, in two units the socio-economic status of residents was relatively high. It is likely that this population, which is characterized by initiative, self-care habits, and relatively high incomes, will take better care of itself. Indeed, the fact that their oral health condition, for example, is relatively good appears to result from adequate self-care and not necessarily from institutional treatment.

The ranking of the units by their compliance with the relevant structural standards for each tracer was compared with their ranking by quality of care (according to Comprehensive Index A). Kendall coefficients were within a range of 0.12 to 0.65, and only four of the eleven (hypertension, difficulty dressing, difficulty washing, and loneliness) were significant. The fact that there was not a clear connection between most of the structural indicators and the process and outcome indicators may be due to a number of reasons:

- Correlations between structure and quality of care (process and outcome) are not necessarily revealed by examining an institution's degree of compliance with accepted standards.
- The structural components were not weighted differentially, owing to the lack of established criteria to measure their relative importance. A simple totalling of the components that meet the standards may not constitute a reliable expression of the extent to which they affect quality of care.
- The present study's sample may be too small to permit an examination

of the relationship between structural aspects and processes and outcomes. The issue may need to be examined in the framework of a larger sample of units.

Despite the technical reasons that make it difficult to examine the relationship between structure and quality, the findings may point to the lack of an unequivocal relation between structural factors and quality of care, even when they are examined at the tracer level. This emphasizes the need to use mainly direct measurements of process and outcome as a basis for assessing quality of care.

Finally, it should be noted that the structural components - whether general structural factors or indices related to specific tracers - are not the only factors affecting quality of care. Without certain structural components, good quality of care is not possible; but their mere existence does not ensure good care. For example, the lack of proper nursing equipment and a registered nurse may result in poor care for bed sores or other nursing problems; but the existence of these components within a unit, even if they meet the recommended levels, does not ensure that the problems will receive adequate care. (Chapter 9 presents a more extensive discussion of possible explanations for shortcomings in quality).

Chapter 9: Possible Explanations for Shortcomings in Quality of Care

After identifying the problems, the next step in any attempt to improve quality of care is to identify the causes of the shortcomings. Observations of relationships between staff and residents, as well as interviews with institutional staff, contributed to an understanding of the causes of shortcomings, as did the examination of the organizational framework of each unit. Meetings with various service providers, the national supervisors, and directors of old age homes were also keys to understanding shortcomings in quality.

Shortcomings may be related to staff (quantity and quality, awareness of problems, perception of responsibility for residents' well-being), the institution's physical structure, the system of service provision, the extent of family involvement, and other features of the care system. Beyond the institutional level, the nature and degree of external supervision of institutions may influence the quality of care. (Figure 1 illustrates these inter-relationships).

This discussion differentiates between shortcomings found in all or most units (that is, those which appear to characterize the entire long-term care system) and shortcomings found in only some units. A more thorough examination of the reasons for shortcomings in quality of care would require further observations of and discussions with institutional staff.

Causes of Shortcomings Found in All or Most Units

Lack of staff awareness of the importance of problems

The medical-nursing staff is not sufficiently aware of the importance of medical problems (such as vision, hearing, and oral

health difficulties and partial incontinence) and psycho-social problems such as loneliness. Staff awareness of problems, including those labelled "untreatable" (such as severe hearing difficulties), is especially important in that it promotes proper staff behavior toward residents since the multiple disabilities of residents are recognized and addressed). Staff members seemed to be generally ignorant of some of the basic concepts of care provision, such as knowing when particular types of care are required. For example, many residents who could benefit from physiotherapy (according to the study team doctor's assessment) do not receive it. Further research is needed to better understand these shortcomings.

Problems in Providing Specialized Medical Care

In units for independent and frail elderly, the institution is responsible for providing only basic medical and nursing care. More specialized medical care, as well as laboratory services, are provided by the local clinics of Kupat Holim (the health insurance/sick fund of the General Federation of Labor in Israel). For elderly who cannot easily get to the clinics, special transportation must be arranged or specialists must be called to the unit at the expense of the institution.

Kupat Holim is not obligated to provide services to anyone receiving care in nursing units, apart from paying for acute hospitalization. The nursing units studied in this sample had different systems of providing specialized medical care. In one unit, Kupat Holim did pay for visits by medical specialists and for laboratory tests. In two others, Kupat Holim paid for only one: the specialist's visit or the laboratory tests; the institution paid for

the elderly's travel expenses and for the testing of samples in Kupat Holim laboratories. Finally, one nursing unit received specialized medical services and laboratory tests from a general hospital with which it is affiliated. Problems arise in this area due to the absence of clear regulations or contractual obligations which make institutions responsible for providing specialized medical services and due to the lack of a mechanism by which institutions are reimbursed for providing such services. Although the cost of providing specialized medical services is supposed to be covered by the payment received for the general care of residents, directors of institutions claim that the payment rates set by the government do not sufficiently take such expenses into account.

Indequate supervision

The external supervision of institutions is not satisfactory. It appears that there is no regular supervision of areas such as vision, hearing, or oral health. Other areas, such as nursing care, are supervised, but the poor conditions found in some of the units indicate the need for improving supervisory methods (supervisors could, for example, make unannounced visits to wards). In addition, internal self-supervision in the institutions seems to be weak and should also be improved to help ensure good quality.

Lack of family involvement

Families of residents are not sufficiently involved in supervising the institutions. External supervision is performed by government ministries and, to a lesser extent, by other public agencies. Family involvement in the functioning of institutions is exceedingly limited. None of the institutions sampled, for example, had a family committee (and only one institution had a residents'

committee). One explanation may be that residents and their families are afraid to organize because they fear that the institution may retaliate, perhaps by expelling the resident from the institution.

Reimbursement

The level of reimbursement to institutions for care provision is obviously an important factor in determining the quality of care received. The Ministry of Labor and Social Affairs makes referrals to institutions for independent and frail elderly and reimburses these institutions for care provided. Likewise, the Ministry of Health makes referrals to nursing care institutions and reimburses them for care provided. In seven of the nine units sampled, almost all residents were referred by government ministries. (One of the two exceptions operates without a license and therefore does not receive referrals; the other accepts mainly private, as opposed to agency-referred, applicants).

Institutions are reimbursed monthly on a per resident basis. The Ministry of Labor and Social Affairs has set separate rates for independent and frail residents. Calculations of these rates are based to a large extent on staffing ratio standards set by the Ministry. Reimbursement rates for nursing units are determined by the Ministry of Health in a similar fashion (Cohen, 1979). However, the Ministry of Health requires higher staffing ratios for public institutions than for private institutions; in public institutions, for example, the standards require 0.5 nursing staff per bed, of which 60% must be nurses, while private institutions are required to have only 0.4 nursing staff per bed, of which only 25% must be nurses.

Neither the Ministry of Labor and Social Affairs nor the Ministry

of Health will reimburse institutions for employing more staff than is required by their respective standards. However, the Ministry of Health does in fact set payments for private homes which vary with the number of staff, up to the maximum staffing ratio standard. The reimbursement rate for private institutions for both nursing and independent/frail elderly are supposed to cover the costs of financing and ensure reasonable profit levels.

Differences were found between public and private institutions in staff ratios, partially as a result of the higher reimbursement rates for public institutions (see Table 11). In private nursing units A and B, for example, the reimbursement rates were lower than in publicly owned nursing units C and D. Similarly, the staffing ratios in units A and B were 57.5 and 70.5 respectively, compared with 100.8 and 79.9 in units C and D. Bergman, Habib, and Tomer (1980) also found in their comprehensive study that staffing patterns in private institutions were relatively poor.

Differences between public and private institutions in reimbursement rates and staffing ratios are reflected in the quality of care provided. According to both comprehensive indices, public institutions provide higher quality care than do private institutions. In fact, public institutions were rated higher than private institutions on nine quality of care indices, whereas only three indices give equal ratings to both types of institutions. This trend is consistent with the findings of Bergman et al. (1983), who found that most indicators of quality show that public units have higher ratings than privately owned units.

Thus a general pattern emerges in which public institutions

Table 11: Manpower, Reimbursement Rates, and Quality of Care^a,
by Type of Ward

	Nursing				Frail			Independent	
	A	B	C	D	E	F	G	H	I
	pri- vate	pri- vate	pub- lic	pub- lic	pri- vate	pub- lic	pri- vate	pub- lic	pub- lic
Manpower (number of positions per 100 residents)	57.5	70.5	100.8	79.9	40.3	63.8	18.3	8.9	38.3
Reimbursement index ^b	83.4	81.0	129.3	95.2	81.9	100.0	- ^c	123.0 ^d	100.0
Comprehensive index A ^e of quality of care	39.0	34.1	49.6	73.1	47.1	66.0	21.6	62.0	72.6
Comprehensive index B of quality of care (not including structure)	31.2	26.4	43.0	68.1	39.4	58.5	24.3	55.4	59.7

^a According to the comprehensive quality indices developed in this study.

^b 100.0 for nursing units: government reimbursement for one nursing patient in a "good" public institution, January-March, 1984 = IS 99,750.
100.0 for frail units: government reimbursement for one frail resident in a "good" public institutions, January-March, 1984 = IS 59,144.
100.0 for independent units: government reimbursement for one independent resident in a "good" public institution, January-March, 1984 = IS 32,429.
The index for each unit was calculated as a percentage of these reimbursements.

^c This institution operates without a license, and the payment is set through negotiations between the institution and clients.

^d The payments are made by the residents and do not include initial payments by residents upon admission.

^e General summary index: 100 is the maximum possible score for quality of care for the problems examined by this study. It was calculated as an arithmetic average of summary indices in the medical, nursing, psychosocial and structural areas. The nursing summary index was not included for the independent wards.

receive higher reimbursements, have more manpower, and provide higher quality of care than do private institutions. Yet, the relationship between reimbursement rates, staffing ratios, and quality of care is not consistent. In nursing unit C, for example, the reimbursement rate and number of staff are especially high, and yet it appears that the quality in that unit is not as good as in nursing unit D, where the reimbursement rate and number of staff are lower. Further examination of the relationship between quality of care, reimbursement, and ownership is needed in order to determine why some units achieve high quality of care despite relatively low reimbursement payments (or, conversely, provide mediocre quality despite high payments or reimbursement rates).¹²

Causes of Shortcomings found in Some Units

Poor physical conditions

The physical conditions of some units detract from the quality of life and care of the residents. As previously mentioned, a shortage of toilets, or inconvenient location of toilets, may "encourage" partial incontinence (a condition found at relatively high rates in a number of units). In addition, overly-crowded rooms, characteristic of nursing units, may have an adverse effect on the residents' privacy.

Lack of basic services

The level of services offered by the institution does not always match the residents' functional level. Frail and nursing patients, for example, are sometimes found in units for independents. This

¹² That high quality can be achieved under low payment conditions has been shown in a study by Longest (1978).

situation is blatant in Unit G (which operates without a license), where many residents are frail and some are nursing patients; yet the unit lacks the appropriate services and manpower to meet their needs. (In fact, this unit has no medical-nursing staff or even para-medical staff, except for a doctor who visits infrequently).

Shortage of nursing staff

Some of the units lack professional manpower and, subsequently, suffer from inadequate internal supervision. The numbers of practical nurses and aides also failed to meet required standards (the Committee for Examining Needs and Costs in Old Age Homes, 1981). These shortcomings in nursing staff were reflected in poor hygienic conditions, neglected or inadequate clothing, and insufficient mobility assistance.

Shortage of staff for psycho-social care

Some units lack social workers and/or activity directors, and, perhaps as a result, provide no special social and recreational activities. Only two wards included social workers (two others were about to hire social workers)¹³. Only two institutions (4 units) offered a variety of social and occupational activities. The overall percentage of residents who reported feeling lonely was fairly high. Even the units with social workers did not offer special programs for easing the loneliness problem, and there was a particular lack of programs for new residents, to ease their transition period from the

¹³ The percentage of institutions in Israel that employ social workers is low. The situation is particularly severe in hospitals for the chronically ill. A study by Bergman et al., (1980) reported that only 54% of old age homes and 29% of hospitals for the chronically ill employed social workers.

community to the institutional environment.

A number of additional causes of shortcomings in care provision were not examined in depth within the framework of this study. In particular, a number of important organizational factors were not addressed. It is worth noting, however, that neither internal supervision by senior staff nor the division of labor among ward staff was always effective.

Chapter 10: The Tracer Methodology and Quality of Care Measurement:
Final Reflections

This study enables several conclusions to be drawn about the usefulness of the tracer methodology for measuring quality of care:

1. By using a number of data collection techniques, it was possible to obtain the information needed for the analysis of most tracers. However, it was impossible to include some tracers (such as "falls") because of unsatisfactory recording in the institutions. Improved record-keeping could enable the inclusion of additional problems which are particularly relevant to quality of care.

2. Multiple sources of information were necessary in order to obtain complete information. The residents themselves were found to be a particularly rich source of data. A high percentage of residents were interviewed in the independent and frail units (97% and 85%, respectively); and a lower, but significant, percentage were interviewed in the nursing units (about 59%). Consequently, the importance of alternative sources (observations, staff interviews, and medical records) in the nursing units was greater. The use of residents' relatives as a source of information should also be considered in these units.

3. Some of the tracers examined are relevant to all wards, and some to only particular types of wards. The nursing tracers, for example (difficulty washing and dressing, incontinence, and need for mobility assistance), are suitable for evaluating quality of care in frail and nursing wards only. The number of residents suffering from these problems in independent wards is too small to provide the basis for a reliable quality index.

4. Most of the quality of care indicators clearly distinguish between "good" and "poor" wards (according to the supervisors' assessments). While the indices usually accord with the supervisors' evaluations, they permit validation and quantification of shortcomings in specific aspects of care.

5. In addition to examining the ability of specific indicators to measure quality of care, an examination of the relationship between the indicators within each area of care is also needed in order to evaluate the tracer methodology. The existence of high correlations between tracers in a given area (nursing, medical, or psycho-social) indicates that a relatively small number of tracers "represent" the area of care, and that by analyzing them it is possible to quantify the quality of care for that area. Furthermore, a close relationship between the quality of care in various areas indicates that the quality of a single area characterizes all or most areas of care in an institution.

The correlation (Kendall coefficients) was examined between unit rankings according to various indicators within a given area, as well as between the summary indices for each area. The data presented in Table 12 indicate a relatively high correlation between the different indicators within the psycho-social, structural, and nursing areas (0.75, 0.65, and 0.67, respectively). A lower correlation was found in the medical area (0.23). The low correlations between tracers in the medical area shows that these tracers are fairly independent and that a single tracer does not provide a reliable picture of the quality of medical care. It therefore appears advisable to examine a number of medical tracers, and to consider adding new tracers.

Table 12: Kendall Concordance Among Various Indicators of Quality of Care

	<u>Kendall Concordance Coefficients</u>
Medical Indicators (blood pressure, hearing, vision, oral health)	0.23
Nursing Indicators (hygiene, dress and cleanliness, mobility ^a)	0.67*
Psycho-social Indicators (loneliness, autonomy, satisfaction)	0.75*
Structural Indices (nursing manpower, living conditions, safety, medical recording)	0.65*
Summary Area Indices (medical, psycho-social, nursing ^a)	0.76*
Summary Area Indices (medical, nursing, psycho-social, structural)	0.79*

* Significant at Alpha = 0.01.

^a Based on seven nursing and frail units.

A fairly high correlation was found among the summary indices in each area, indicating that quality of care in the "poor" units is usually deficient in more than one area. However, it is still possible that a "good" unit will have deficient areas, and that a "poor" unit will provide satisfactory care in particular areas.

6. Adaptation of the tracer methodology to the needs of the supervisory system and to the needs of directors of institutions appears to be both feasible and advisable. It would require some simplification of both the types of information gathered and the methods of collection. The institutions themselves can contribute to this process by improving and upgrading their medical records, thus enabling more methodical and reliable use of recorded information.

Chapter 11: Improving the Quality of Institutional Care:
Issues and Directions

The study's findings raise a number of general issues for further research and point to a number of possible directions for improving the quality of the long term care system in Israel. Both the further examination of these issues and the implementation of needed changes require, to varying degrees, the involvement and cooperation of researchers, supervisors, professionals in the field of gerontology, service providers, policymakers in the area of service provision to the aged, educators in the area of manpower training, as well as the elderly and their families.

Suggested Directions for Change in the System of Long-term Care

While these suggestions are based mainly on the data and experience of the present study, they also take into consideration the findings of previous research.

1. Factors beyond the institution

Priority setting for improvement of care:

Improvement, especially of those areas that are presently neglected, necessitates clear policy guidelines for setting priorities and for determining the resources that the long-term care system in Israel is willing and able to devote to these activities. It is clear that these policy decisions require both professional input and the involvement of the highest echelons in the Ministry of Labor and Social Affairs and the Ministry of Health.

Establishment of responsibility for service provision among

the care agencies:

The examination of existing rules, regulations, and procedures which was carried out in the framework of this study identified many missing gaps (Israel, The Knesset, 1965, 1977). Some areas of care are not even addressed; those which are addressed seldom contain a clear formulation of institutional responsibility toward residents. Improvement of rules and regulations should focus not only on institutions but on other agencies as well, such as the residents' medical insurance sick fund, local social services, and the residents' families.

Coordination and cooperation among care agencies:

The maintenance of regular ties between institutions and other agencies that deal with the elderly (Kupat Holim, hospitals, local welfare agencies, etc.) is a necessary condition for proper provision of care. The data indicate that institutional links with these agencies regarding issues such as hospitalization and need for medical equipment are usually deficient, and that the creation of regular channels of communication and cooperation could greatly contribute toward the improvement of the quality of institutional care.

Improvement of care procedures:

Important work has already been done in setting standards for care and disseminating them formally throughout the care system. There is now a need to continue this work by emphasizing the areas found in this study to be neglected and by providing appropriate

guidelines for improvement. In general, it is preferable that the approaches to care reflect a preventive approach which is based on constant identification and follow-up of problems that could later develop into disabilities in the elderly (such as hearing and vision difficulties).

Improvement of supervisory methods and use of appropriate

rewards:

An effective supervisory system can greatly contribute to the system of institutional care. Such a system must:

- function on an ongoing basis, to enable close follow-up of changes occurring in the institutions.
- use valid and reliable tools that enable quantification of variables related to care.
- focus on specific problems (such as hearing and vision problems), as well as examine more general issues, such as structural aspects of institutions.
- focus on deficient or potentially deficient areas within institutions.
- initiate a system of appropriate incentives (monetary or other) to induce motivation for upgrading the quality of institutional care. The granting of rewards should be based on a valid method for measuring the quality of care (Spilerman and Litwak, 1983).

This study is one step in the development of an effective supervisory system; its main contribution has been the development of appropriate measurement instruments. There is still a need to develop an overall strategy aimed at improving the ability of the supervisory system to fulfill its quality assurance role.

2. Training within the Institution

Enhancement of staff awareness of residents' problems: -----

Staff unawareness of the functional difficulties of residents (vision or hearing difficulties, for example) raises questions about staff sensitivity to those who suffer from these problems. The fact that institutions are not held responsible for treating such problems is a likely cause of staff neglect. It is also possible that the basic and supplementary training of institutional doctors, nurses, and social workers is, in some areas, insufficient. If this latter assumption is examined and found to be true, then there is a need to improve training programs at all levels.

Enhancement of staff awareness of residents' psycho-social ----- needs: -----

The findings of this study indicate a lack of awareness by professional staff of residents' feelings of loneliness, as well as a general lack of attention to residents' "human" needs (or attention to their functional needs only) by non-professional staff. The level of sensitivity to these areas can be raised through formal training and on-the-job supervision and guidance.

3. Contacts with the community

In some institutions, residents are isolated almost to the point of being totally cut off from the outside world. Volunteer activities and transportation services can help to alleviate this isolation.

Organization of volunteer activities:

Most institutions do not organize regular volunteer activities. It is therefore recommended that such activities be organized, at least in part, by the local authorities, such as local social services, clubs for the aged, and community centers.

Improvement of access to the community from the institution
and to the institution from the community:

Transportation is an important component in the quality of a resident's institutional life. Improvement of transportation services, or provision of special transportation once or twice a week, may be extremely helpful to residents in maintaining minimal contact with the community.

4. Structural elements

The structural aspects of institutions analyzed in this study included, among others, the physical conditions of the institutions, staffing patterns, activities and services provided to residents, and certain organizational procedures. Some of the conclusions regarding these elements are discussed below.

Improvement of physical conditions in institutions:

Sub-standard physical conditions may detract from the residents' privacy as well as prevent easy access to some parts of the institution. Structural improvement usually requires a large financial investment and, occasionally, transfer to another building. However, some problems can be overcome by re-organization (e.g.,

enabling nursing patients to move more freely within the institution or in the immediate vicinity) or by relatively inexpensive structural changes (e.g., putting up screens between beds). Institutional supervisors should advise directors in creating plans for improving physical structure.

Improvement of staffing patterns:

Manpower shortages were found in both the nursing and psychosocial areas. The percentages of nursing staff in some units did not meet the required standards. Furthermore, social workers and activity organizers were not found in some of the independent and frail units, despite a formal requirement to employ these types of workers. Similarly, no social workers or activity organizers were found in nursing units. Although there is fairly widespread agreement concerning the importance of social workers in these units, the existing formal requirements do not call for their inclusion on the staffs of institutions. Problems also arise in small institutions, where there is a need for such professionals in part-time positions. Some staff shortages may be overcome by creating on-going links with professionals outside the institution who could visit residents regularly and upon referral.

Organization of daily social and occupational activities:

The current situation in this area is unsatisfactory, particularly in those units that lack the required manpower (social workers, activity organizers, etc.). Even in such units, activities could be organized by the institutional staff, with the help of the

residents and their families. Supervisors should insist that social and occupational activities take place regularly.

Improvement of admission procedures:

Standardized admission procedures should be improved in order to help new residents overcome adjustment and loneliness problems. For example, professional guidance could be provided upon admission, including talks with new residents about their feelings and fears and advice about the norms of institutional life.

Periodic assessments and appropriate referral:

Quality of care can be improved by referring the elderly to units that are most appropriate for the type of care needed. Adapting the level of care to the client's needs is important not only at the time of the initial referral. It is also desirable to conduct ongoing assessments of the resident's condition in order to determine whether he or she should be transferred to another ward or institution. This is a complicated matter, since every transfer may involve new adjustment difficulties. Although this study did not examine the functioning of the referral system, it did find shortcomings in the performance of periodic assessments of the residents' conditions. In most units, these assessments are not performed, and there are no procedures for examining the possibility of transferring residents to other wards or institutions if their conditions change.

Improvement of the organizational structure:

In some institutions, the division into wards was found to exist more on paper than in fact. It appeared that there was essentially no

separation between units labelled independent, frail, and nursing, and that these units had no staff of their own. It is recommended, therefore, that the supervisory agencies pay particular attention to the organizational aspects of institutional care.

Improvement of the Recording System Within Institutions:

Recording in medical, nursing, and social files was seriously deficient in the institutions studied. Proper recording of diagnoses, social data, and medical and nursing care is vital as a means of providing institutional staff with all relevant data available when making care plan decisions and monitoring patients' progress. Furthermore, without proper recording, it is extremely difficult for government supervisors to assess care provision in institutions.

Development of Internal Quality Assurance Programs:

None of the sampled institutions had a system for self-monitoring of care provision. Experience in other countries has demonstrated that internal quality assurance programs can be an effective means of maintaining high levels of care. Good internal monitoring, in conjunction with effective government supervision, would be a powerful means of ensuring high quality.

5. Family involvement

Increased involvement of residents' families in institutional activities:

The data indicated a lack of contact or, at best, sporadic contact between families and institutions. Similar findings were

obtained regarding family visits to residents. In addition to the need to encourage families to visit more often, it is also important to encourage those who visit regularly to take a more active part in institutional life. With few exceptions, there were no family organizations or committees. It is desirable to encourage this type of activity (perhaps even by law) in order to guarantee the basic rights of both residents and their families. These rights include such aspects of institutional living and care as privacy and autonomy, the residents' ability to influence decisions that affect them, and the right to receive adequate treatment.

Recommendations for Futher Research

1. This study represents only one stage in the development of reliable and valid instruments for the measurement of quality of institutional care. Further development of these instruments requires additional empirical research using larger samples of institutions and residents.

2. The study found that vision, hearing, oral health, partial incontinence, and loneliness problems are not adequately treated in long-term care institutions, even in those considered to be of high quality. Identifying the causes of these problems and exploring ways to address them will entail further research involving professionals, supervisors, service providers, and others in the care system.

3. Standards of care for the treatment of several problems were found to be non-existent, weak, or insufficiently clear. The standards need to be strengthened and adjusted in order to ensure adequate care and facilitate quality assurance and assessment.

4. Prioritization of residents' problems and the need for

treating them should be established. This can be done by analyzing the assessments of professionals chosen specifically for this purpose (and possibly also assessments by residents and their families).

5. The tracer approach used in this study proved to be fruitful. It should be developed both in theory and in practice, by identifying additional tracers and developing instruments for their measurement.

The possibility of adapting this approach and these instruments for use by various clients, especially supervisory systems, should be explored. This would require their willingness to adopt the tracer approach and to cooperate closely with researchers. The development of the tracer approach should take into account budgetary and legal limitations, as well as other practical considerations.

Summary

This study confirms the suitability of the tracer approach for measurement of the quality of institutional care in a research framework. This approach can also be used as a basis for establishing supervisory methods that are related less to measuring structural components than to examining the process and outcome of specific care problems.

Although the sample was small, the findings clearly show that there is room for considerable improvement in the care of institutional residents. In addition, there appeared to be many areas in which there is a need to establish more clearly defined expectations and lines of responsibility. We hope that the findings will encourage all concerned with long-term care - policymakers, professionals, care providers, and researchers - to contribute to the ongoing process of improving the treatment and care of the elderly.

Appendix: Sources of Data and Definitions of Problems^a

Tracer	Sources of Data	Definition of Problem
1. Hypertension	a. Average of 4 blood pressure measurements by study team doctor and nurse. b. Physical examination by study team doctor. c. Perusal of medical records by study team.	Systolic blood pressure > 160 mmHg; or diastolic blood pressure > 95 mmHg (WHO definition); or hypertension diagnosed by doctor or anti-hypertensive drugs prescribed.
2. Vision difficulties	a. Interview of resident by study's interviewer. b. Interview of responsible nurse by study team nurse. c. Physical examination by study team doctor.	Report by resident of vision difficulty for short or long distances; or report by responsible nurse of vision difficulties.
3. Hearing difficulties	a. Interview of resident by study's interviewer. b. Interview of responsible nurse by study team nurse. c. Physical examination by study team doctor.	Report by resident of hearing difficulty that affects performance of daily activities; or report by responsible nurse of hearing difficulties.
4. Oral health problems	Examination of the resident's oral cavity by study team oral epidemiologist.	a. Edentulous (no dentures in either jaw); or b. defective dentures (at least one of the following is defective: stability vertical dimension, fit, retention and occlusion; or c. diseased natural teeth; or d. oral mucosal diseases (including proliferative lesions, ulcerative lesions, degenerative conditions, white lesions, developmental conditions, and non-specific condition) ^b ; or e. poor oral hygiene. ^{cd}

^a The instruments for measuring quality of care are detailed in Fleishman and Tomer, et al. (1985b).

^b Kramer et al. (1980).

^c Green and Vermillion (1964).

^d An assessment of oral hygiene among denture wearers is presented in Fleishman et al. (1985a).

Appendix, continued

Tracer	Sources of Data	Definition of Problem
5. Mobility problems	a. Interview of resident (including demonstration) by study team nurse. b. Interview of responsible nurse by study team nurse. c. Physical examination by study team doctor.	Resident needs mobility assistance (cannot walk a distance of about three meters without help from others; or report by responsible nurse of difficulty walking without help.
6. Difficulty in washing	a. Interview of resident by study team nurse. b. Interview of responsible nurse by study team nurse.	Report by resident or responsible nurse of need for help washing.
7. Difficulty in dressing	a. Interview of resident (including demonstration) by study team nurse. b. Interview of responsible nurse by study team nurse.	Report by resident or responsible nurse of need for help dressing (cannot put on a shirt without help).
8. Difficulty in brushing teeth	a. Interview of resident by study team nurse. b. Interview of responsible nurse by study team nurse.	Report by resident or responsible nurse of need for help brushing teeth.
9. Urinary incontinence	a. Interview of resident by study team nurse. b. Observations by study team nurse. c. Examination by study team nurse. d. Interview of responsible nurse by study team nurse. e. Physical examination by study team doctor.	Partial incontinence: resident occasionally "wets himself". Full or total incontinence: resident consistently "wets himself", uses catheter or penrose, or is defined by doctor as fully incontinent.

Appendix, continued

Tracer	Sources of Data	Definition of Problem
10. Feeling of loneliness	a. Interview of resident by study's interviewer.	Resident reports feelings of loneliness for two of the three questions in the interview.
11. Lack of autonomy	a. Interview of resident by study's interviewer. b. Observations of institution by study's interviewer. c. Interview of responsible nurse by study's interviewer. d. Interview of institution's doctor by study's interviewer.	Resident reported restrictions for at least 50% of the items measuring use of facilities and privacy (10 items total).

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Evaluation of quality of care in long-te

Fleishman, Rachel



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המכון

הוא מכון ארצי למחקר, לניסוי ולחינוך בגרונטולוגיה והתפתחות אדם וחברה. הוא נוסד ב־1974 ופועל במסגרת הג'וינט האמריקאי (ועד הסיוע המאוחד של יהודי אמריקה), בעזרתן של קרן ברוקדייל בניו־יורק וממשלת ישראל.

בפעולתו מנסה המכון לזהות בעיות חברתיות ולהציב להן פתרונות חילופיים בשירותי הבריאות והשירותים הסוציאליים בכללם. אחד מיעדיו הוא להגביר שיתוף הפעולה של מומחים מהאקדמיות והממשלה, עובדי ציבור ופעילים בקהילה כדי לגשר בין מחקר לבין מימוש מסקנות מחקר הלכה למעשה.

דפי דיון

נכתבים על־ידי חברים מצוות המכון ומתפרסמים להתייחסותם של אנשי מקצוע ומתמחים במדעי החברה וההתנהגות, עובדי ציבור ונבחרי ציבור, המשתתפים בעיצובם של המדיניות והשירותים החברתיים.

הכוונה היא להפנות תשומת לב לסוגיות חברתיות בעלות חשיבות לאומית לשם העשרת הדיון הציבורי לקידום של המדיניות, ההסדרים והשירותים החברתיים.

המימצאים והמסקנות המוצגים בדפים הם של המחבר או המחברים וללא כוונה ליצג את אלה של המכון או של פרטים יוגופים אחרים הקשורים למכון.

BR-D-125-86

c.3

הערכת איכות הטיפול במוסדות לטיפול ממושך בישראל:

שיטת המסמנים



רחל פליישמן (1)

אדריאן תומר (1)

עם

מרים בר-גיורא (2), שמואל ורטסקי (3), חמדה כהן (3),
רות מרחב (1), אסתר נלקן (4), דב פלס (5),
ארנולד רוזין (6) וראובן שורץ (1)

- (1) מכון ברוקדייל לגרונטולוגיה והתפחות אדם וחברה בישראל
- (2) משרד העבודה והרווחה
- (3) משרד הבריאות
- (4) מרכז יום גריאטרי שיקומי תלפיות מזרח (קופת חולים)
- (5) בית הספר לבריאות הציבור, האוניברסיטה העברית, ירושלים
- (6) מרכז רפואי שערי צדק

המחקר מומן בעזרת המוסד לביטוח לאומי

תקציר

מאמר זה מתמקד בפיתוח כלים לבדיקת איכות הטיפול במוסדות לטיפול ממושך לקשישים. המאמר בודק ביסודיות את איכות הטיפול במספר יחידות אשר סווגו בעבר ע"י, המפקחים הארציים של משרד העבודה והרווחה ושל משרד הבריאות, כיחידות "טובות" או "לא טובות". כמו כן עומד המאמר על הגורמים העיקריים המשפיעים על איכות הטיפול.

המאמר מתאר את השימוש בשיטת המסמנים במדידת איכות הטיפול. מסמן הינו בעיה רפואית, סיעודית או נפשית-חברתית מוגדרת היטב ובעלת שכיחות גבוהה, אשר ידוע שניתן לטפל בה.

צוות רב-מקצועי שכלל רופא, אחות, מומחה לבריאות הפה, מרפאה בעיסוק ומראיינים, עסק באיסוף הנתונים. נעשו בדיקות של הדיירים נערכו ראיונות עם הקשישים ועם אנשי צוות במוסדות, נערכו תצפיות ונבדקו תיקים רפואיים וסוציאליים.

מוצגים ממצאים לגבי 11 מסמנים שנלקחו מתחומי הטיפול הרפואי, הסיעודי והנפשי-חברתי. נעשה ניתוח של כל מסמן בעזרת מדדי תהליך ו/או מדדי תוצאה (מודעות הצוות, הלימות הטיפול, ניקיון הקשיש). כמו כן נבדקו משתנים מבניים הקשורים למסמנים. איכות טיפול לא טובה הוגדרה כאשר הצוות אינו מודע לקיומן של בעיות ו/או כאשר בעיה איננה זוכה לטיפול.

מן הממצאים עולה כי קיימת מודעות נמוכה ביותר של הצוות לבעיות של ראייה, שמיעה, בריאות הפה, אי-שליטה חלקית על סוגר השתן ובדידות. הטיפול בבעיות אלה התגלה כבלתי הולם - בדרך כלל, אפילו באותן יחידות שסווגו כ"טובות". לגבי מסמנים אחרים - כולל בעיות ניידות וקושי ברחצה, לבישת בגדים וצחצוח שיניים - נמצאו שעורים גבוהים יותר של מודעות הצוות ושל טיפול, אך נמצאה שונות גדולה בין היחידות השונות.

אותרו מספר גורמים ישירים ובלתי ישירים לליקויים באיכות הטיפול.

בנוהלים הממשלתיים אין הגדרה ברורה של אחריות המוסדות לתחומי טיפול ספציפיים (כגון בעיות ראייה). גורמים אחרים התורמים לאיכות לקויה כוללים

רישום בלתי אמין, פיקוח ממשלתי בלתי סדיר, שעורים נמוכים של מעורבות משפחתית, מחסור בכח אדם וקשר בלתי מספיק עם מומחים רפואיים שונים בקהילה. המחקר יצא מן ההנחה כי ניתן להגיע לתמונה מקפת של איכות הטיפול ע"י בדיקה של מספר מוגבל של מסמנים המייצגים את תחומי הטיפול העיקריים. השערה זו נתמכת ע"י המיתאם הגבוה שנמצא בין המסמנים הן בתחום הסיעודי והן בתחום הנפשי-חברתי. המיתאם הנמוך שנמצא בין המסמנים בתחום הרפואי מעלה את ההשערה כי יש צורך במספר רב יותר של מסמנים רפואיים כדי להגיע למדידה מדויקת של איכות. מיתאמים גבוהים שנמצאו בין כל אחד משלושת התחומים מצביעים, בין היתר, על כך שהמוסדות במדגם שטיפולם בבעיות הרפואיות הוא לא טוב, מטפלים בצורה לא טובה גם בבעיות סיעודיות ונפשיות-חברתיות. לסיכום, נמצא כי שיטת המסמנים היא שימושית מבחינה זו שהיא מאפשרת הערכה כמותית ואובייקטיבית של איכות, מתמקדת בהיבטי טיפול ספציפיים, ומסייעת לאיתור ליקויים בהספקת טיפול. בנוסף לכך, כאשר השיטה מיושמת לאורך זמן, היא מאפשרת מיפוי של המגמות המאפיינות את הספקת הטיפול.

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