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Massachusetts Institute [illegible]
of Technology
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SUPPLEMENTARY FEEDING IN RURAL EGYPT: A SUMMARY PROFILE OF THE HEALTH SYSTEM IN ACTION

Robert Burkhardt

John Osgood Field

George Ropes

M.I.T. - Cairo University
Health Care Delivery Systems Project

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PERSONNEL ASSOCIATED WITH THE HEALTH CARE DELIVERY SYSTEMS PROJECT

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Dr. Osman Galal	Head, Department of Nutrition, National Research Council

M.I.T.

Dr. John Osgood Field	Research Associate, Center for International Studies, and Associate Professor, Graduate Department of Nutrition, Tufts University
Dr. Richard S. Eckaus*	Professor, Department of Economics
Dr. Mohamed el Lozy	Assistant Professor, Department of Nutrition, Harvard School of Public Health
Mr. George Ropes	Doctoral candidate, Department of Political Science
Mr. Robert Burkhardt	Doctoral candidate, Department of Economics

* Principal Investigator

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PREFACE

This monograph is one in a series of studies being prepared by the M.I.T.-Cairo University Health Care Delivery Systems Project, a collaborative research venture featuring scholars at the two schools in association with senior officials in Egypt's Ministry of Health.[1]

Since its inception in May 1977, the project has examined health care delivery in relation to malnutrition, morbidity, infant and early childhood mortality, and fertility. This has entailed two types of inquiry, the data for which have been collected, converted into machine-readable form, and analyzed (in part) to date.

One line of inquiry consists of computer-based analysis of governorate data concerning infant mortality, the birth rate, various demographic and developmental indices, and characteristics of the health system. This work examines the interaction between infant mortality and fertility in Egypt and attempts to identify the effects that different modes of development have on each. Also probed are the independent impact of health interventions on infant births and deaths, the circumstances conditioning popular utilization of health services, and problems of "reporting bias" in the data. This research locates the malnutrition-mortality-fertility

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[1] The Health project is one of fourteen projects sponsored by the Cairo University - M.I.T. Technological Planning Program. This program was established in 1977 with funding from the United States Agency for International Development for the purpose of bringing Egyptian and American scholars together in policy-oriented research intended to assist the government of Egypt.

dynamic in its socio-economic context and then illuminates the critical linkages and causal patterns involved.[2]

The second line of inquiry is the one relevant to this monograph. It entailed design of a Health System Questionnaire and its distribution to a national sample of 132 rural health centers and units (one per district in the 17 rural governorates of Lower and Upper Egypt).[3] The questionnaire, which was administered by the Ministry of Health in March - April 1978, solicits three types of information, as follows:

> Part I: perceptions, beliefs, attitudes, and reported procedures on a range of issues, with the head doctor of each facility being the principal respondent. Topics include health problems encountered, how these problems are dealt with, use of scales and growth charts, the allocation of supplementary foods, experience with family planning, feelings about rural people, difficulties experienced, and overall job satisfaction.

> Part II: data routinely recorded at the center/unit level organized into new categories, disaggregations, and combinations in order to make these data more informative and serviceable. Topics include births and birth supervision, childhood deaths and their attributed causes, utilization rates, recorded child weights, and immunizations.

> Part III: data on nutritional status generated by a two-week exercise of weighing more than 4,000 children in a subsample of health centers (one per governorate), along with an assessment of the exercise by those responsible for executing it.

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2 See John Osgood Field and George Ropes, "Infant Mortality, the Birth Rate, and Development in Egypt," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #1 (May 1980), and "The Influence of the Health System on the Recorded Incidence of Infant Mortality and Birth Rates in Rural Egypt," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #2 (June 1980).

3 Omitted were the four urban governorates of Cairo, Alexandria, Port Said, and Suez owing to the Ministry's administrative separation of rural and urban services. Also omitted were the four sparsely populated "frontier" governorates.

Part I seeks to define how health care is delivered at the periphery of the health system, where contact with the public takes place. Part II assesses the utility of existing data collected at the local level for problem identification, program planning, and monitoring. Part III has two purposes: to test the feasibility of making nutritional surveillance an on-going activity of the rural health service, and to generate new growth data for comparison with the perceptions and existing records already secured in Parts I and II. The questionnaire in its entirety constitutes the principal concern of the Health Care Delivery Systems Project and should also emerge as the project's principal contribution to the Ministry of Health. The Ministry, in turn, deserves principal credit for successful implementation of the questionnaire in all its parts.

This monograph addresses the Ministry's experience with supplementary feeding in rural Egypt. If properly designed, implemented, and integrated with other services, the allocation of supplementary foods can make a significant contribution to alleviating malnutrition among children in that most vulnerable of periods (roughly between 6 and 24 months of age) triggered by the onset of weaning or by the growing insufficiency of breast milk for meeting nutritional needs. The message of this monograph is that the Ministry's ambitious efforts to make food supplements available to children at risk are likely to have disappointing results unless the process of distribution is accompanied by improved programming. Other monographs based on the Health System Questionnaire deal with the sur-

veillance of child growth, with family planning, and with the project's own weighing exercise.[4] In addition, the project has produced a Reference Manual containing distributions along with regional and governorate breakdowns of the data generated by the questionnaire.[5]

Robert Burkhardt, the principal author of this study, is a doctoral candidate in the Department of Economics at the Massachusetts Institute of Technology. John Osgood Field, Associate Professor of Nutrition and Political Science at Tufts University, is also a Research Associate in M.I.T.'s Center for International Studies. George Ropes is a doctoral candidate in the Department of Political Science at M.I.T. All three authors wish to acknowledge the many contributions of their counterparts at Cairo University and in the Ministry of Health in making this analysis possible.

John Osgood Field
June 16, 1980

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4 See John Osgood Field and George Ropes, "Monitoring Malnutrition in Rural Egypt: Opportunities and Constraints," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #7 (forthcoming); Robert Burkhardt, John Osgood Field, and George Ropes, "Family Planning in Rural Egypt: A View from the Health System," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #6 (June 1980); and Mohamed el Lozy, John Osgood Field, George Ropes, and Robert Burkhardt, "Childhood Malnutrition in Rural Egypt: Results of the Ministry of Health's 'Weighing Exercise,' " M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #4 (June 1980).

5 "Results of the Health System Questionnaire Administered by the Ministry of Health, Arab Republic of Egypt, at 132 Rural Health Centers and Units, March - April 1978: A Reference Manual," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #3 (May 1980).

SUPPLEMENTARY FEEDING IN RURAL EGYPT:
A SUMMARY PROFILE OF THE HEALTH SYSTEM IN ACTION

I. Introduction

Supplementary feeding is the most common intervention used by governments of developing countries to improve the nutritional status of small children.[1] In the case of Egypt, there is a clear need for effective food supplementation. Recent evidence indicates that malnutrition is widespread among infants and other preschool-age children in poor families, a fact well understood by many doctors.[2] Indeed, in 1978 more than three out of four doctors (78%) in a national sample of rural health centers and units explicitly cited protein-energy malnutrition as being among the principal health problems of children under five in their area (see Table 1).[3]

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[1] Alan Berg notes that child feeding is the most widespread of nutrition programs and accounts for upwards of 95% of all budgets directed to child nutrition in low income countries (The Nutrition Factor, Washington, D.C.: The Brookings Institution, 1973, p. 160). Results of the Harvard Institute of International Development's Nutrition Intervention Mail Survey indicate that four out of five nutrition interventions around the world, public and private, use supplementary foods (HIID, Annotated Directory of Nutrition Programs in Developing Countries, 1978 (June 1978), p.1).

[2] Mohamed el Lozy, John Osgood Field, George Ropes, and Robert Burkhardt, "Childhood Malnutrition in Rural Egypt: Results of the Ministry of Health's 'Weighing Exercise'," M.I.T. - Cairo University Health Care Delivery Systems Project, Monograph #4 (June 1980). See also Arab Republic of Egypt: National Nutrition Survey, 1978 (Washington D.C.: Agency for International Development, 1979).

The health system in Egypt is not the only vehicle for distributing supplementary foods, but it is an especially important vehicle. The health system's impressive infrastructure gives it ready access to the most vulnerable population: infants and toddlers along with pregnant and lactating women. As a result, supplementation administered by the Ministry of Health has a decided advantage over supplementation conducted through schools and other outlets, granted that these are also used in Egypt and are more typical world-wide.[4] In recognition of its own special assets and in recognition, too, of the close interaction between malnutrition and infection, the Ministry of Health has made a significant commitment to supplementary feeding in recent years.[5]

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[3]When implicit references to PEM (growth failure, stunting, general debility, etc.) are taken into account, the proportion rises to 87%. See Table 1.

[4]See Simon Maxwell, "Food Aid for Supplementary Feeding Programmes," Food Policy, 3 (November 1978), 290-291, for a discussion of this point. This paper also has a concise and readable evaluation of what results supplementary feeding has produced world-wide.

[5]In Fiscal Year 1979 the Ministry distributed 14,000 metric tons of wheat soy blend, bulgur, and cooking oil donated by Catholic Relief Services to 543,000 recipients. In addition, 900 metric tons of the Ministry's own weaning food, Supramene, were distributed to 222 health centers. The government also provided dry milk to all governorates for use in maternal and child health services. Source: USAID/Cairo.

This paper examines supplementary feeding as it is managed by the health system in rural Egypt. The role of supplementary feeding in the activities of rural health centers and units is one of the themes addressed in the M.I.T. - Cairo University Health System Questionnaire which the Ministry of Health administered in the field in March and April of 1978. The head doctor at each of 130 facilities answered the questions asked, and when all of these responses are put together, one acquires a rich overview of how food supplements are distributed at the local level.[6]

Several questions orient our analysis. To what extent do Egypt's rural health centers and units use supplementary food as a resource for meeting the nutritional needs of at-risk groups? How much care do they take concerning who gets the food and how it is distributed within recipient families? Is the allocation of food supplements integrated with other services, or does it tend to be more of an isolated activity? To what extent is the effort well-programmed, purposeful, and consistently managed from one facility to another? In sum, what is the burden of experience to date? How well is supplementary feeding being implemented? What shortcomings exist; how prevalent are they; and what might be done to overcome them?

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[6]In all, 132 rural health centers and units were sampled, or one per district in the 17 non-urban governorates of Lower and Upper Egypt. Responses were not received from two facilities, one each in Damietta and Aswan.

These are important questions in the Egyptian context. Allen and Koval, in their report detailing the experience of Catholic Relief Services in facilitating supplementary feeding in Egypt, indicate some of the pressures which could lead to haphazard distribution of food supplements by the health system:

> "A nationwide feeding project...poses conflicts...between the central planner in government and the health care personnel at grass-roots level....The central planner is anxious to increase the coverage to more than 12% of the eligible population..., but the physician at the health unit is already burdened by the logistics of distributing this quantity of food with some sense of dignity if not purpose. If told that the target population must be increased five-fold, then the physician must of necessity resign herself to forsaking the practice of medicine for the role of a glorified inventory clerk."[7]

With pressures such as these, the danger exists that supplementary feeding might deteriorate into a mere dumping operation at the center/unit level, thereby subverting the worthy purposes for which it was initiated.

To answer the questions posed, we present several attributes associated with effective supplementary feeding[8] and then use these attributes as a basis for evaluating the

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[7]Stephen R. Allen and Andrew J. Koval, "Food Aid for Supplementary Feeding: A Case Study From Egypt," paper presented at the Conference on Interface Problems Between Nutrition Policy and its Implementation, Massachusetts Institute of Technology, November 5-8, 1979, p.1.

[8]Our primary source of documentation for these attributes is the Harvard Institute of International Development study, James Austin, et al., Nutrition Intervention Assessment and Guidelines, report submitted to the United Nations ACC Sub-Committee on Nutrition (June 1978), Part II.

Egyptian experience as revealed by the doctors in charge of health care delivery at the center/unit level. The results are then summarized in a scale combining several key pieces of data in a measure of how rural health facilities perform overall in their administration of supplementary feeding. The analysis concludes by relating differences in performance to various other characteristics of the centers and units, including the beliefs and attitudes of the doctors who manage them.

II. Supplementary Feeding: Recommended Practice

International experience with supplementary feeding is extensive; and if the approaches followed vary considerably, nevertheless there are several principles of supplementary feeding that have become widely accepted.[9] Well-designed programs typically feature four attributes, however much they may differ in other respects.

1. The food supplements are targeted to "vulnerable" groups, especially preschool children in the 6-36 month age cohort. An effort is made to insure that they, not

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[9]To illustrate some of the differences in approach, food supplements are often given to mothers on a "take-home" basis. This is the pattern followed in Egypt's rural health system. Many programs, by contrast, conduct "on site" feeding, and some of these are administered through nutrition rehabilitation centers to which severely malnourished children come for a lengthy period (usually three months).

other family members, are the principal beneficiaries and that the food provided is supplementary, not substitutive, in effect.

2. Supplementation is provided to the same children over an extended period of time, perhaps as much as a year or more.[10] Distribution to recipients takes place at regular intervals during this period.

3. Supplementation is accompanied by the close monitoring of child growth and health status. Typically this includes weighing and the use of growth charts.[11] Such monitoring is useful for two reasons. First, it is an accurate means of determining the length of time that a malnourished child needs food supplements for purposes of returning to health and normal growth. Second, it alerts the doctor (or health worker) in case supplementation is not sufficient to arrest growth failure and

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[10] "In take-home feeding programs, a year or more may be required before measurable nutritional impact occurs" (Austin et al., op. cit., p.47). Allen and Koval, op. cit., p. 9, also strongly recommend that a malnourished child "be given food for a minimum period of one year."

[11] "The weight chart gives a warning of danger of malnutrition usually many months (and at least several weeks) before the earliest clinical or biochemical evidence of protein-energy deficiency. Children at high risk may be distinguished even earlier, and the separation of children into high (and low) risk groups will enable child care services to be concentrated on the children most in need" (David Morley, "The Design and Use of Weight Charts in Surveillance of the Individual," in George M. Beaton and J. M. Bengoa, Nutrition in Preventive Medicine, WHO Monograph No. 62, Geneva, (1976), p.527).

forestall the onset of serious disease.[12]

4. Supplementation is accompanied by appropriate education of mothers concerning proper use and preparation of the food along with broader messages pertaining to food consumption, health, and hygiene generally.[13]

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[12] Monitoring in this case entails weighing and otherwise examining people who come to the center/unit, as well as reaching out to people in the community at large. The relationship between monitoring and feeding also has a synergistic aspect to it; that is, integrating the two activities allows each activity to be much more effective than it would be in isolation. Doctors evaluating the weighing exercise (Part III of the Health System Questionnaire) frequently mentioned the importance of food supplements to successful monitoring, the reason being that the food serves as an incentive for mothers to bring their children in for weighing. For example, a doctor in Assiut observed that it was "difficult to convince people to bring their children...to be weighed....This exercise could have been well done if the people were given money or food." Reporting greater success, a doctor from Kena governorate said, "Cooperation of the people was marvelous. That was because the people thought that each child weighed would be given supplementary food." For more on the mechanics of monitoring, see Methodology of Nutritional Surveillance, Report of a Joint FAO/UNICEF/WHO Expert Committee, Geneva, World Health Organization Technical Report Series #593 (1976). See also Derrick B. Jelliffe, The Assessment of Nutritional Status in the Community, Geneva, WHO Monograph Series 53 (1966).

[13] Austin et al., op. cit., also contains a chapter on nutrition education, as does Berg, op. cit. The challenge to nutrition education posed by Egyptian society is clearly defined in Wafik A. Hassouna, Beliefs, Practices, Environment and Services Affecting the Survival, Growth and Development of Young Egyptian Children: A Comparative Study in Two Egyptian Governorates, Institute of National Planning monograph (August 1975), notably Chapter 2. See also Cathclic Relief Services documents pertaining to the education component of CRS's nutrition program in Egypt.

These four attributes rest on several propositions whose validity is well established. One is that explicit and careful targeting is cost-effective in terms of attaining nutrition goals. Another is that continuous contact with beneficiaries is essential to success. A third is that the allocation of food supplements is unlikely to work well unless integrated with other health services. A fourth is that primary health care requires substantial community participation, not only for identifying children at risk but also as a means of facilitating execution of the entire package of activities which constitutes the international norm so far as supplementary feeding is concerned.

The question before us now is how the expanding supplementary feeding program in rural Egypt fares when measured against the standards identified.

III. Supplementary Feeding in Rural Egypt: An Overview

We begin our analysis of the Egyptian experience with supplementary feeding by examining the extent to which and the contexts in which child growth is monitored in rural health centers and units. This leads to the issue of targeting supplements to children showing clear signs of growth failure or at risk of doing so. Next comes the mode of allocation to beneficiaries: the time frame involved during which individual recipients are given food and the phasing

of the distribution. This is followed by the linkage of supplementary feeding with educational efforts to assist mothers in taking full advantage of the food provided and to help them better cope generally with the health and nutritional needs of their children. Finally, the evidence amassed is brought together in an aggregate "supplementary feeding performance scale" on which the centers and units responding to our questions are then located.

The most effective way of monitoring large numbers of children is to weigh them at regular intervals and to record the results on growth charts. In this way, any faltering of growth is quickly detected. From the questionnaire data, however, it appears that this procedure is not a common practice within the health system in rural Egypt. As seen in Table 2, a sizeable majority of the centers and units in the sample (61%) do not possess growth charts for infants at all.[14] Moreover, only 35% reported weighing infants regularly when they are brought to the center/unit (see Table 4).

In another question relevant to the monitoring of nutritional status, respondents were asked whether infants are weighed or given a medical check-up when brought in for compulsory vaccinations. For 65% of the centers and units,

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[14] The record is worse for older preschool children. When doctors were asked whether growth charts are ever used for children one through five years of age, 88% said "no" (Table 3).

weighing, checking, or both, are done on such occasions (Table 5). In fact, immunization would appear to be the context in which most monitoring takes place. Even when allowance is made for weighing at other times, the figure does not change appreciably. In all, 90 of 130 centers and units (69%) report monitoring children at one time or another. This is a healthy proportion. However, the low usage of growth charts indicates that the close monitoring of nutritional status needed for early detection and treatment of malnutrition is not done routinely.

The second part of the questionnaire also has data pertaining to how well the centers and units monitor child growth. One question asked each facility to provide weight records for the first 19 children born in 1977. For the most part, these records show that centers and units do not regularly weigh children in their first year of life. To illustrate, of the more than 1,500 children 12 months of age or older for whom data were provided, 28% had not been weighed since birth and another 23% had not been weighed at all (Table 6). Moreover, almost half (46%) of the sampled centers and units had weighed less than 25% of the children between four and seven months of age, the period when growth failure typically begins (Table 7). For subsequent weighings, the record is even more spotty. In all facilities only one-third of the children had been weighed between eight and sixteen months of age (Table 7). In sum, many

centers do not effectively monitor children in the critical first year of life, and the monitoring becomes even less effective as the children become older.

Aside from detecting malnutrition among children who are brought to the center/unit, health facilities must also have some sort of outreach program if all who require food supplements are to receive them. In the main, this is not done by the health system in rural Egypt. When doctors were asked whether they provide health care to small children only when the children are brought to the center/unit, 79% responded "true" or "mostly true" (Table 8). For the statement "People who don't come to the center/unit for treatment do not receive health care from the center/unit," the proportion assenting was 73% (Table 9).

Finally, in order for the monitoring of child growth to be useful to the center/unit's supplementary feeding program, the information so gathered must be utilized when decisions concerning allocation (who gets the food, how much, when, and for how long) are made. However, it appears that relatively few centers and units prescribe supplementary food for the treatment of malnutrition. When asked how cases of malnutrition are managed, only 29% of the doctors responded that a food supplement is used (Table 10). Indeed, two-thirds of the centers and units responding either distribute the food after hours or at times other than when the clinic is open (Table 11). This is an indica-

tion that food distribution is a marginal activity for most facilities and, accordingly, that in most instances the food is not distributed using information on nutritional status.

In sum, the supplementary feeding efforts of most centers and units are not well targeted. This shows in the doctors' perceptions of who actually eats the food. Although most of the centers give appropriate answers when asked to whom food is given (Table 12), doctors in 56% of the centers and units believe that ultimately the food is either consumed by the entire family or by animals (Table 13) and not by the specific persons for whom it is intended.

Even if food is targeted, a supplementary feeding program must be well administered in order to be effective. One criterion for good administration is that a designated child receive supplementation long enough, say a year, for its benefits to be felt.[15] When asked for how long the same recipients receive supplementary food, only 14% of the doctors indicated time periods of longer than six months, 53% indicated time periods of six months or less, and 25% replied "no set pattern" (Table 14). Obviously, one year is not the standard in rural Egypt. However, it is worth noting that 60% of the doctors surveyed do feel that it is feasible to give food to the same recipients for at least a year (Tables 15 and 16).

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[15]See footnote 10, p.6, for citations regarding this norm.

Supplementary food should also be distributed to recipients at regular intervals during the time frame involved. Here again practice in the rural health system does not conform to standard. Two-thirds (68%) of the centers and units responding stated that when food is available it is distributed all at once rather than over a period of time (Table 17). An even larger number of facilities have a problem maintaining an adequate supply of supplementary food. Seventy-nine percent stated that they do not have enough food to meet popular demand (Table 18), and 83% responded "true" to a query as to whether they often lack supplementary foods (Table 19). So, even were health facilities in rural Egypt to adopt the practice of distributing food at regular intervals, many would find it difficult to sustain the practice.

It also appears that most rural health centers and units do not monitor the health and growth of recipients during the period that they receive food. Half (51%) of the facilities responding stated flatly that they neither weigh nor provide check-ups to children who come to the center/unit for food supplements. An additional 29% admit to "no set pattern" (Table 20). Moreover, 75% of the centers and units agreed that it is "true" or "mostly true" that they only follow up on cases which return to the center/unit (Table 21). The implication of these patterns is that in most facilities the process of food supplementation is divorced from the other services offered to small children.

Not even the monitoring of child growth -- intermittent and casual as it is -- is well integrated with the distribution of food.

A final attribute which a supplementary feeding program often requires to be effective is appropriate education. The questionnaire data indicate that most centers and units do provide some nutrition education. Of the doctors responding, 72% stated that they manage malnutrition with nutrition education and information (Table 10), and 93% said that they or other staff members offer education on maternal and child nutrition specifically (Table 22). This is a commendable level of effort by any standard. However, it seems likely that much of this education is unrelated to supplementary feeding. When queried as to whether recipient mothers are given lessons when food is distributed, 42% of the doctors replied that this is done rarely or not at all (Table 23).[16] In addition, about half (53%) of the centers and units providing nutrition education may be doing so inefficiently by emphasizing individual rather than group instruction (Table 22).

In order to obtain an overall assessment of performance -- and by performance we mean the degree to which supplementary food is used as a resource to improve the nutritional

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[16]The 68 centers and units where nutrition lessons are given "sometimes" or more frequently address the following topics: How to prepare the food (46 or 71%), the value of the food (31 or 48%), general nutritional advice (30 or 46%), to whom to give the food (20 or 31%), and "other" (15 or 24%) (Table 24).

status of malnourished children and the degree to which supplementary feeding is integrated with the other activities of the center/unit -- the answers to four key questions discussed above are combined into a scale. Each question is weighted equally in the scale, and each was chosen to reflect one of the four most important attributes of an effective supplementary feeding program. A center/unit scores a point each time that it answers a question correctly (in the sense that practice conforms with recommended procedure). One point is scored for each of the following attributes:

1. Malnutrition is managed with a food supplement (see Table 10). Responses concerning how observed malnutrition is managed suggest the extent to which supplementary food is likely to be used instrumentally to meet the nutritional needs of at-risk groups, particularly infants and children. A correct answer here indicates that doctors perceive food supplementation as an instrument available to them for treating malnutrition.[17]

2. Children receive a medical check-up and/or are weighed when supplementary foods are provided (see Table 20). At issue here is how well children are being monitored

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[17]No question in the questionnaire explicitly asked the doctor whether supplementary food is used preventively to forestall malnutrition.

during the time that they are receiving food supplements.[18]

3. Supplementary food is distributed over a period of time (see Table 17). This question checks to see that centers and units make a practice of distributing food to recipients at regular intervals rather than just when a shipment of food is received by the center/unit.

4. Mothers are given a lesson every time or almost every time that they receive supplementary food (see Table 23). This question considers whether mothers are instructed how to derive maximum nutritional benefit from the food.

This scale combines the extent to which food supplements are viewed as a resource relevant to malnutrition with the extent to which the provision of supplements is handled programmatically. The ideal implied is, in fact, standard operating procedure in many low income countries, although doing the right thing does not necessarily mean doing it well. Nevertheless, food supplements are targeted to the preschool-age child at risk with the dual intent of alleviating an observed state of malnutrition and of arresting the process of nutritional decline before it begins or worsens. Accordingly, the distribution itself is phased over time,

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[18]Centers and units are given no credit if their reply is "no set pattern."

with the designated beneficiaries receiving supplements at appropriate intervals. Sustained support for individuals is the antithesis of unprogrammed, one-shot dumping.

Moreover, in programs all over the world supplementation is linked to the monitoring of child health and growth performance, which it facilitates much as continued monitoring identifies those most in need of nutritional assistance. A positive synergism emerges when the two activities are integrated.[19] This is true also of the fourth component of the scale. Nutrition education rarely works well as an isolated intervention. Most programs attempting information dissemination and attitude change do so in tandem with tangible transfers, such as food supplements, as an inducement to learning even while the transfers themselves are made more beneficial by the improved understanding and practice encouraged by educational efforts.

Our scale, in short, summarizes the state of the art so far as supplementary feeding is concerned. At the same time, it provides an opportunity to observe the Egyptian experience in terms of programmatic linkages that have become standard in the international community.

Table A indicates how the centers and units fare on this overall performance scale. As is shown, few centers and units manage to score more than two points. Thus, it appears that most centers and units conduct supplementary

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[19]See footnote 12, p.7, for evidence from the Health System Questionnaire on this point.

TABLE A

SUPPLEMENTARY FEEDING PERFORMANCE SCALE:
THE DISTRIBUTION OF CENTER/UNIT SCORES
(4 = BEST POSSIBLE SCORE)

Score	Number of Centers/Units	% of Centers/Units Responding
4	5	4.5
3	9	8.0
2	25	22.3
1	43	38.4
0	30	26.8
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	112	100.0

Note: Eighteen centers and units whose answers were incomplete are excluded from the tabulation.

feeding in a manner which is far from the ideal implied by the scale. In addition, this tabulation reveals an important characteristic of the responses received. For each of the questions used in the scale, 20 to 30 centers and units give the correct response. Table A shows that these 20 to 30 centers and units do not represent a core of effective programming within the health system. Rather, most centers and units do well in one or two areas, while only a small number display more than half of the attributes examined.

Table B presents the same scale according to governorate and regional scores. Two observations are suggested by the patterns shown. First, the individual governorates are

TABLE B

SUPPLEMENTARY FEEDING PERFORMANCE SCALE
BY GOVERNORATE AND REGION

Governorate	Score 0	1	2	3,4
Damietta (2)		1:50%	1:50%	
Dakahlia (10)	4:40%	2:20%	3:30%	1:10%
Sharkia (9)	3:33%	5:56%		1:11%
Kalyubia (8)		5:63%		3:38%
Kafr-el-Sheik (6)	3:50%	2:33%		1:17%
Gharbia (4)	2:50%		2:50%	
Menufia (6)	3:50%	1:17%	1:17%	1:17%
Behera (5)		1:20%	2:40%	2:40%
Ismailia (3)	1:33%	1:33%		1:33%
Giza (8)	3:38%	1:13%	4:50%	
Beni-Suef (6)		4:67%	2:33%	
Fayoum (5)	1:20%	3:60%	1:20%	
Minya (9)	1:11%	5:56%	2:22%	1:11%
Assiut (9)	2:22%	2:22%	5:56%	
Souhag (9)	2:22%	5:56%	2:22%	
Kena (10)	3:30%	4:40%		3:30%
Aswan (3)	2:67%	1:33%		
Lower Egypt (53)	16:30%	18:34%	9:14%	10:19%
Upper Egypt (59)	14:24%	25:42%	16:27%	4:7%
Sample (112)	30:27%	43:38%	25:22%	14:13%

Note: Numbers in parentheses are the total number of centers and units responding.

remarkably diverse in the performance of their rural health centers and units. Behera may have the best overall record, but there are no clearly superior or inferior governorates so far as supplementary feeding is concerned. Diversity of experience within each governorate is what stands out. Second, Lower Egypt and Upper Egypt are quite similar in how

their respective facilities distribute on the scale. Performance is not influenced by region. It is substandard in both parts of the country and in all governorates.

IV. Why Performance Varies

Given that there are marked differences in how food supplements are distributed in rural Egypt, it is of interest to learn how location on the supplementary feeding scale relates to other attributes of the rural health system. What characteristics influence how well centers and units perform on the scale, and what are the characteristics of those facilities with the best scores?

It might be thought that certain attributes of the centers and units themselves have something to do with the way in which supplementary feeding is managed. We examined placement on the scale in relation to type of facility, functional load (staff size vis-a-vis the number of MCH visits), isolation (distance to the nearest town), and reported shortages of space, storage facilities, transportation, and -- needless to say -- the availability of supplementary food. Contrary to expectation, none of these attributes distinguishes relatively good performance from relatively poor performance. Nor do various characteristics of the doctor in charge; the doctor's sex, age, background, and experience all make little difference. Not even the inci-

dence or salience of malnutrition among small children is predictive.[20]

One characteristic which varies quite clearly with the supplementary feeding performance scale is the center/unit's overall orientation to health care delivery. Early in the questionnaire we asked the doctors to identify as true, mostly true, or not true the following two statements: "We follow up on cases only when they return to the center/unit," and "People who don't come to the center/unit for treatment do not receive health care from the center/unit." Three-quarters of the doctors surveyed agreed that these statements on outreach and follow-up are at least mostly true (Table 21 and Table 9). By putting their responses together, we have created an objective activity-passivity index, "objective" because the index summarizes the way in which a given center or unit is said to relate to the people served by it.

As Table C indicates, almost two-thirds of the centers and units are passive when it comes to outreach and follow-up, whereas only one-sixth have an activist orientation.

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[20]In each case the differences are small and statistically insignificant using a chi-square test on the percentage of centers and units that score two or better on the scale. The one attribute which, on its own, is associated with greater prevalence of high scores is the doctor's having interned at a university hospital. The small elite (15%) who did so and who did not also intern at a government hospital are more likely to work in facilities with relatively high scores, 56% of this elite as against 36% of all doctors. Their special quality and/or distinctive training is -- we believe -- the reason why their facilities fare better on the scale.

Moreover, as Table C also indicates, the likelihood of a center/unit's performing reasonably well so far as supplementary feeding is concerned is related to its broader orientation. Active facilities are almost twice as likely to score well as passive facilities. The association is not perfect by any means. Almost half of the active centers and units come out quite poorly on the supplementary feeding performance scale, while more than a quarter of the passive centers and units come out quite well. Nevertheless, knowing how a facility scores on the orientation index is a useful clue to its location on the supplementary feeding scale.

Also discriminating are several beliefs and attitudes of the doctors, including how active or passive they believe health care should be. Just as we created an objective activity-passivity index on the strength of how the doctors described the actual orientation of their centers and units, so we have created a subjective activity-passivity index concerning the doctors' personal orientation to health care. At the end of the questionnaire the doctors were invited to respond to the following three statements:[21]

> "We offer services. It is up to the public to decide whether to use them." (Q.83c)
>
> "To really meet the people's needs, health care must be taken outside the center/unit itself." (Q.83e)

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[21] See Table 25 for the distribution of responses received.

"People who do not come to the center/unit should not receive health care from the center/unit." (Q.83g)

TABLE C

RELATIONSHIP BETWEEN A CENTER/UNIT'S PLACEMENT ON AN OBJECTIVE ACTIVITY-PASSIVITY INDEX AND A SCORE OF TWO OR BETTER ON THE SUPPLEMENTARY FEEDING PERFORMANCE SCALE

Objective Activity-Passivity Index*	Distribution of Centers/Units	Percent of Facilities Scoring 2 or Better on Supplementary Feeding Performance Scale
Active orientation	16%	53%
Mixed experience	19%	43%
Passive orientation	65%	28%
	(N=130)	(N=112)

*Active means a "not true" response to both questions identified in the text. Passive means a "true" response to both. Mixed means a response of "true" to one and a response of "not true" to the other.

Note: The chi-square statistic for column two is 4.83, which is significant at a 10% level.

Table D shows how the doctors distribute when their responses are combined. Almost half (47%) of those expressing themselves on all three statements reveal an activist orientation; a third have mixed sentiments; and a fifth are clearly passive. This distribution is the opposite of the one indicated in Table C. The doctors in our sample are

more active in outlook than they say their centers and units are in practice. Table D also shows that their subjective orientation to health care informs how well they manage supplementary feeding. Those who are passive on the subjective index are least likely to score well on the supplementary

TABLE D

RELATIONSHIP BETWEEN A DOCTOR'S PLACEMENT ON A SUBJECTIVE ACTIVITY-PASSIVITY INDEX AND HIS CENTER/UNIT'S RECEIVING A SCORE OF TWO OR BETTER ON THE SUPPLEMENTARY FEEDING PERFORMANCE SCALE

Subjective Activity-Passivity Index*	Distribution of Centers/Units	Percent of Centers/Units Scoring 2 or Better on Supplementary Feeding Performance Scale
Active orientation	47%	44%
Mixed experience	33%	41%
Passive orientation	20%	17%
	(N=110)	(N=95)

*Active means agreement with Q.83e and disagreement with Q.83c and Q.83g. Passive is the reverse. Mixed is the residual. See the text for the statements themselves.

Note: The chi-square statistic for column two is 4.37, which just misses being significant overall at a 10% level.

feeding performance scale.

The strongest influence on how well supplementary feeding is handled is the doctor's own satisfaction with his job. As Table E indicates, the manner in which a doctor

evaluates his training and his progress as a professional says a great deal about how he is likely to manage the allocation of food supplements. So does satisfaction with rural employment. Doctors who are basically content with their job themselves do a better job. It would seem that their own outlook generally is a significant factor in how much time and effort they put into making supplementary feeding a well-programmed resource for meeting nutritional needs. Doctors unhappy with their situation typically do not bother. For them, in particular, supplementary foods are a nuisance to be dispensed with as simply and as quickly as possible.[22]

In sum, how well supplementary feeding is implemented at the center/unit level is a function of two principal factors: first, the extent to which health care generally displays an active approach to outreach and follow-up, and second, the orientation of the doctors in charge, most notably in terms of their own job satisfaction. Food shortages are not responsible for the typically poor scores attained on the supplementary feeding performance scale; most (79%) of the doctors surveyed acknowledged often not having enough supplementary foods, but even those admitting to adequate supplies fare no better on the scale. What does make a big

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[22] We have additional evidence that doctors who express problems and frustrations, as many did, are not as likely to perform well on the supplementary feeding scale as are those who were less inclined to complain. The same is true of doctors betraying negative feelings about rural people.

TABLE E

BELATIONSHIP BETWEEN THE DOCTOR'S JOB SATISFACTION AND HIS CENTER/UNIT'S RECEIVING A SCORE OF TWO OR BETTER ON THE SUPPLEMENTARY FEEDING PERFORMANCE SCALE

		Percent of Centers/Units Scoring 2 or Better on Supplementary Feeding Performance Scale
"On the whole, do you feel that your education and training prepared you adequately for rural health service?" (Q.77)		
	YES (56%)	51%
	NO (40%)	16%
	OTHER (4%)	
"Are you satisfied with your progress in reaching the career goals that you have set?" (Q.81)		
	YES/YES AND NO (59%)	44%
	NO (30%)	17%
	OTHER (11%)	
"Working in a rural area is quite enjoyable." (Q.83f)		
	TRUE (51%)	47%
	NOT TRUE (42%)	19%
	OTHER (7%)	
"I personally wish I were working in a more modern environment." (Q.83h)		
	TRUE (52%)	24%
	NOT TRUE (43%)	48%
	OTHER (5%)	

Note: All differences in percentage are significant at a 5% level or better.

difference is the doctor himself. The health system may have standard rules and regulations governing the allocation of supplementary foods, but in terms of what actually takes place much depends on the interest, concern, and overall motivation of the doctor in charge. On the other hand, even when these sentiments are positive, performance on the supplementary feeding scale remains quite low (0 or 1) in about half of the cases. If local circumstances are influential, the fact remains that a major upgrading of performance is called for in the entire system.

V. Conclusion

As the Egyptian experience indicates, a well-conceived and well-managed supplementary feeding program does not happen automatically. Even when the will to succeed exists, as it most certainly does exist in the Ministry of Health, formidable problems arise in converting commitment into effective implementation. Moreover, increasing the amount of food supplements made available and expanding the coverage of supplementary feeding in society are themselves challenges to the coherence, coordination, and ultimate effectiveness of the entire enterprise.[23] Indeed, a system oriented to the practice of modern medicine can hardly be blamed if the merit of supplementary feeding is lost on those responsible for administering it at the local level.

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[23]Allen and Koval, op. cit.

There is another point that needs to be raised if our findings are to be put in proper perspective. To set up a standard of excellence, as we have done, and then to compare the Egyptian case to it, as we have also done, borders on being unfair. The standard invoked may reflect international experience, but it represents the apex of that experience -- the ideal more than the norm. Supplementary feeding is a complex venture under the best of circumstances. It is most expertly conducted in local areas served by small programs which, more often than not, are administered by private organizations.[24] Egypt has taken on the burden of making large what is usually small, of making national what is usually local, and of making bureaucratic what is usually philanthropic. It is a tall order; and if one is tempted to bemoan the slippage that occurs in translation, one must applaud the effort nonetheless.

When all is said and done, the shortfalls in performance identified in this analysis are inevitable in any new undertaking and particularly in one which, by definition, entails serious logistical, planning, and training problems which go to the core of center-periphery cleavages. It is

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[24] See, for example, John Osgood Field, "Development at the Grass Roots: The Organizational Imperative," paper presented at the World Food Forum: Practical Points of View, Hiram College, Hiram, Ohio, March 31, 1978, and published in the Proceedings of the Forum (March 1979). More definitive evidence is presented in a doctoral dissertation by David F. Fyle which examines what happens when government takes over feeding programs initiated by voluntary agencies (Department of Political Science, Massachusetts Institute of Technology, forthcoming).

also helpful to recognize that alleviating malnutrition is only one of the potential benefits of supplementary feeding, that even in the absence of nutritional payoffs the supplements represent an income transfer of some importance, and that the food involved can serve as a catalyst facilitating the attainment of other objectives, such as improving the image of health facilities and stimulating greater utilization of them by the public.

Nevertheless, the real reason why food supplements are provided, in Egypt as elsewhere, is that many children are malnourished. The supplements are intended to assist the most defenseless members of society. They are also intended to help break the dynamic by which malnutrition and disease conspire to produce high rates of infant and early childhood mortality, which in turn contribute to high fertility and population growth.

In light of its extensive food imports and costly consumer subsidies, the Egyptian government is already making a significant investment in the nutritional well-being of the population. Much now depends on the health sector to bring that investment to fruition both because malnutrition is so closely tied to disease and because the supplementary feeding effort which promises the best payoff in terms of benefitting the nutritionally at-risk is the one administered by the Ministry of Health. Indeed, how well food supplementation is carried out is an indicator of how effectively the

health system is likely to meet the special needs of Egypt's most vulnerable citizens generally.

The record revealed by the M.I.T. - Cairo University Health System Questionnaire implies that there is ample room for improvement. Not only is the administration of supplementary feeding in rural Egypt far removed from accepted international practice; it runs counter to the government's own goals. The following review both summarizes the central tendencies discerned in the data and provides a check list of deficiencies in need of remedial attention.

The allocation of food supplements is neither linked to health check-ups nor to nutrition-health education.

The food is typically distributed all at once, not at regular intervals.

Individual recipients are not benefitted over an appropriate time frame.

Allocation of the food typically occurs after clinic hours; it is not integrated -- conceptually or in practice -- with other health services.

Food supplements are not widely perceived as a resource for addressing malnutrition, and little effort is made to promote consumption by vulnerable groups.

The weighing of children is haphazard and is not tied to the allocation of food supplements.

Growth charts typically are not available; when available, they typically are not used.

> Outreach from health facilities into the communities they serve is limited; follow-up on cases is intermittent; and -- in general -- initiative for health care is left to the public except in the case of immunizations.

In sum, the supplementary feeding administered by the rural health system tends to be an isolated exercise of ill-defined purpose and lacking programmatic content. That is why the scores attained on the supplementary feeding performance scale are so low. The overwhelming impression conveyed by the doctors' own testimony is literally that of a dumping operation. The doctors do not seem to understand what they should do, and they are not doing what needs to be done in order to make food supplementation nutritionally effective.

To list deficiencies such as these runs the risk of appearing to be unduly critical. Such is not our intention. The fact of the matter is that Egypt has undertaken to do something which, however conventional in type, is thoroughly unconventional in degree. That there should be shortcomings in the initial, experimental stage is hardly surprising. The effort required is immense; resources are limited; and the health system is really not set up for this sort of thing. Any criticism implied in our analysis is appropriately muted by a sense of profound respect that such an undertaking has even been attempted.

Nevertheless, the problem -- in our judgment -- goes beyond the deficiencies summarized above. To note these

deficiencies and then to order them corrected, while useful and probably even necessary, will not in itself solve the problem. The reason is that performance on supplementary feeding is a reflection of the basic orientation of the system as a whole and is also influenced by the morale and inner contentedness of the doctor in charge at the local level. Neither lends itself to easy improvement. Both are complex, sensitive, and embedded in a total context. The real challenge facing innovators in the Ministry of Health is to make supplementary feeding, as well as other new programs, a cutting edge for more general reform.

TABLE 1

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

"The first set of questions in this exercise deals with the health problems of small children in the area you serve, with specific reference to children under 5 years of age. We are interested in knowing what you (and your staff) consider the health problems of these children to be and also how serious you think these problems are in your area."

Q. 1: WHAT WOULD YOU SAY ARE THE PRINCIPAL HEALTH PROBLEMS AFFECTING CHILDREN UNDER 5 IN THE AREA YOU SERVE? PLEASE IDENTIFY.

- Responding: 126 of 130 centers/units (96.9%)
  Not responding: 4 (3.1%)

IDENTITY OF HEALTH PROBLEMS CITED*

	N	% of Centers Responding	% of Total Centers	% of All Responses
Protein-calorie malnutrition/ marasmus/kwashiorkor	98	77.8	75.4	23.9
Gastroenteritis/dehydration/ diarrheal diseases	75	59.5	57.7	18.3
Respiratory infections	48	38.1	36.9	11.7
Fevers/general infections	42	33.3	32.3	10.2
Parasitic infestations	38	30.2	29.2	9.3
Growth failure/stunting/ debility	18	14.3	13.8	4.4
Vitamin and mineral deficiencies	4	3.2	3.1	1.0
Accidents	2	1.6	1.5	0.5
Mortality	0	---	---	---
Other health problems/ background factors#	85	67.5	65.4	20.7
	410			

Note: Because multiple responses were possible, the number of responses exceeds the number of centers and units responding.

* The categories employed were developed for coding purposes.

\# Background factors include poverty, ignorance, living conditions, and the like.

TABLE 1 (Continued)

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 1 (continued)

NATURE OF THE REFERENCES TO MALNUTRITION
BY REGION

	Sample		Lower Egypt		Upper Egypt	
Explicit references to protein-calorie malnutrition	98	(75%)	51	(76%)	47	(75%)
Implicit references to protein-calorie malnutrition only*	11	(8%)	3	(4%)	8	(13%)
References to vitamin and mineral deficiencies only	0		0		0	
Malnutrition not mentioned	17	(13%)	10	(15%)	7	(11%)
Question not answered	4	(3%)	3	(4%)	1	(2%)
	130	(99%)	67	(99%)	63	(101%)

* Implicit references are references to growth failure, stunting, and general debility.

TABLE 2

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 30: DOES YOUR CENTER/UNIT POSSESS GROWTH CHARTS FOR PLOTTING THE WEIGHT MEASUREMENTS OF INFANTS (CHILDREN 0-1)?

- Responding: 126 of 130 centers/units (96.9%)
  Not responding: 4 (3.1%)

RESPONSES

	Yes, Plenty	Yes, But at Times Not Enough	No
Damietta (2)	1:50%		1: 50%
Dakahlia (10)	3:30%	3:30%	4: 40%
Sharkia (10)	2:20%		8: 80%
Kalyubia (8)	1:13%	1:13%	6: 75%
Kafr-el-Sheik (7)	2:29%	1:14%	4: 57%
Gharbia (8)	1:13%	6:75%	1: 13%
Menufia (8)		4:50%	4: 50%
Behera (11)	1: 9%	2:18%	8: 73%
Ismailia (3)			3:100%
Giza (6)	2:33%	1:17%	3: 50%
Beni-Suef (7)	1:14%	2:28%	4: 57%
Fayoum (5)	2:40%		3: 60%
Minya (9)	2:22%	4:44%	3: 33%
Assiut (9)	1:11%	2:22%	6: 67%
Souhag (11)			11:100%
Kena (9)		2:22%	6: 67%
Aswan (3)	1:33%		2: 67%
Lower Egypt (67)	11:16%	17:25%	39: 58%
Upper Egypt (59)	9:15%	11:19%	38: 64%
Sample (126)	20:16%	28:22%	77: 61%

Note: Numbers in parentheses above are the total number of centers/units in the sample that responded to this question.

Other responses: "Other" (1): Kena (1).

TABLE 3

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 32: ARE GROWTH CHARTS EVER USED FOR OLDER PRESCHOOL CHILDREN (1-5 YEARS)?

- Responding: 129 of 130 centers/units (99.2%)
  Not responding: 1 (0.8%)

RESPONSES

	N	% of Centers
Yes	15	11.6
No	114	88.4
	129	100.0%

LOCATION OF POSITIVE RESPONSES

Lower Egypt		Upper Egypt	
Damietta:	1	Giza:	1
Sharkia:	3	Fayoum:	1
Kalyubia:	1	Minya:	1
Kafr-el-Sheik:	1	Kena:	2
Gharbia:	1		
Menufia:	1		5
Behera:	2		
	10		

TABLE 4

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 26: HOW OFTEN ARE INFANTS (CHILDREN 0-1) WEIGHED WHEN THEY ARE BROUGHT TO THE CENTER/UNIT?

- Responding: 128 of 130 centers/units (98.5%)
  Not responding: 2 (1.5%)

RESPONSES

	Every Time	Usually	Sometimes	Rarely	Never
Damietta (2)		1:50%		1:50%	
Dakahlia (10)	2:20%	1:10%	4:40%	3:30%	
Sharkia (10)	4:40%	1:10%	4:40%	1:10%	
Kalyubia (7)	2:29%	1:14%	2:29%	1:14%	1:14%
Kafr-el-Sheik (7)	2:29%		2:29%		3:43%
Gharbia (8)	2:25%	2:25%	2:25%		2:25%
Menufia (8)	1:13%	1:13%	3:38%	1:13%	2:25%
Behera (10)	2:20%	2:20%	1:10%	2:20%	3:30%
Ismailia (3)		1:33%	1:33%	1:33%	
Giza (8)	3:38%	2:25%		1:13%	2:25%
Beni-Suef (7)	1:14%	2:29%	1:14%		3:43%
Fayoum (5)	1:20%	1:20%	2:40%		1:20%
Minya (9)	1:11%		6:67%		2:22%
Assiut (10)		3:30%	4:40%		3:30%
Souhag (11)	1: 9%	2:18%	1: 9%	2:18%	5:46%
Kena (10)	2:20%		2:20%	3:30%	3:30%
Aswan (3)		1:33%			2:67%
Lower Egypt (65)	15:23%	10:15%	19:29%	10:15%	11:17%
Upper Egypt (63)	9:14%	11:18%	16:25%	6:10%	21:33%
Sample (128)	24:19%	21:16%	35:27%	16:13%	32:25%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 5

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 52: WHEN INFANTS (CHILDREN 0-1) ARE BROUGHT IN FOR COMPULSORY VACCINATIONS, ARE THEY WEIGHED OR GIVEN A MEDICAL CHECK-UP?

- Responding: 130 centers/units (100%)

RESPONSES (IN ORDER OF FREQUENCY)

	N	% of Centers
Yes, infants given a check-up	51	39.2
Yes, infants weighed and checked	30	23.1
No	23	17.7
No set pattern	21	16.2
Yes, infants are weighed	3	2.3
Other	2	1.5

TABLE 6

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part II
March 1978
Question #10 (continued)

- Responding: 104 of 131 centers/units (79.4%)
  Not responding: 27 (20.6%)

THE EXTENT TO WHICH CHILDREN AGE 12 MONTHS OR MORE WERE WEIGHED AT BIRTH, AROUND SIX MONTHS, AND SUBSEQUENTLY, BY REGION

	Sample (%)	Lower Egypt (%)	Upper Egypt (%)
Weighings:			
At birth only	28.3	24.4	33.9
Birth and 6 months	16.0	14.3	18.3
Birth and "last"*	1.6	2.3	0.5
At 6 months only	0.1	0.1	---
At 6 months and "last"*	1.6	2.7	---
"Last"* only	0.1	0.2	---
All three	29.9	32.3	26.5
None	22.5	23.7	20.8
	100%	100%	100%
N (eligible children)	1,542	904	638

* "Last" weighing refers to any weighing when a child was eight months of age or older.

Note: In order for a child to be included in this tabulation, he or she had to be at least 12 months old as of March 1978 and, therefore, eligible for all three weighings solicited in Question 10. Weights outside the monthly range for each category (4-7 months for "around 6 months" and 8-16 for "last") are considered as missing.

TABLE 7

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part II
March 1978
Question #10 (continued)

- Responding: 104 of 131 centers/units (79.4%)
  Not responding: 27 (20.6%)

WEIGHTS ACTUALLY RECORDED AS A PERCENT OF WEIGHTS POTENTIALLY RECORDED AT THE CENTER/UNIT LEVEL

	BIRTH WEIGHTS		WEIGHTS AT AROUND SIX MONTHS		LAST WEIGHING		ALL THREE INSTANCES	
	N	%	N	%	N	%	N	%
More than 75% of the weights	78	75.0	47	45.6	30	29.4	39	37.5
Between 50% and 75%	2	1.9	6	5.8	5	4.9	18	17.3
Between 25% and 50%	1	1.0	3	2.9	3	2.9	23	22.1
Less than 25% of the weights	23	22.1	47	45.6	64	62.7	24	23.1
	104	100%	103	100%	102	100%	104	100%
Average % of weights actually recorded	76.4%		48.8%		33.1%		55.2%	

Note: A child is considered as potentially weighable at six months of age if he or she was at least seven months old sometime between January 1977 and April 1978. The child is then recorded as actually having been weighed only if he or she was weighed between the age of four and seven months inclusive. A child is considered as potentially weighable subsequently ("last weighing") if he or she had reached the age of twelve months (one year). The child is then recorded as actually having been weighed only if he or she was weighed between the age of eight and sixteen months inclusive. In each case, children are not counted as weighable if death prevented their attaining the minimum age specified. Facilities are the units of analysis in this table. Twenty-seven facilities (one-fifth of the sample) failed to answer any aspect of the question and are omitted from the tabulation.

TABLE 8

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

"One of our principal concerns is how rural health centers and units deal with the health problems of people, especially the health problems of children under 5 years of age. In the questions that follow, we explore various aspects of how your center/unit functions. Again, may we remind you that all information you provide will be held in the strictest confidence. So please be candid and factual."

Q. 15: HOW TRUE OF YOUR CENTER/UNIT IS THE FOLLOWING STATEMENT?

"WE PROVIDE HEALTH CARE TO CHILDREN UNDER 5 ONLY WHEN THEY ARE BROUGHT TO THE CENTER/UNIT."

- Responding: 129 of 130 centers/units (99.2%)
  Not responding: 1 (0.8%)

RESPONSES

	True	Mostly True	Not True	Other
Damietta (2)		1:50%	1:50%	
Dakahlia (10)	2: 20%	6:60%	2:20%	
Sharkia (10)	2: 20%	7:70%	1:10%	
Kalyubia (8)	2: 25%	2:25%	3:38%	1:13%
Kafr-el-Sheik (7)	4: 57%	2:29%	1:14%	
Gharbia (8)	3: 38%	1:13%	4:50%	
Menufia (8)	4: 50%	3:38%	1:13%	
Behera (10)	3: 30%	3:30%	2:20%	2:20%
Ismailia (3)	3:100%			
Giza (8)	4: 50%	2:25%	2:25%	
Beni-Suef (7)	1: 14%	4:57%	2:29%	
Fayoum (5)	3: 60%		2:40%	
Minya (9)	6: 67%	3:33%		
Assiut (10)	5: 50%	4:40%	1:10%	
Souhag (11)	4: 36%	5:46%	1: 9%	1: 9%
Kena (10)	7: 70%	3:30%		
Aswan (3)	3:100%			
Lower Egypt (66)	23: 35%	25:38%	15:23%	3: 5%
Upper Egypt (63)	33: 52%	21:33%	8:13%	1: 2%
Sample (129)	56: 43%	46:36%	23:18%	4: 3%

Note: Numbers in parentheses are total numbers of centers/units in the sample that responded to this question.

TABLE 9

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 21 (continued)

b. "PEOPLE WHO DON'T COME TO THE CENTER/UNIT FOR TREATMENT DO NOT RECEIVE HEALTH CARE FROM THE CENTER UNIT."

- Responding: 130 centers/units (100%)

RESPONSES

	True	Mostly True	Not True	Other
Damietta (2)			1:50%	1:50%
Dakahlia (10)	4:40%	4:40%	2:20%	
Sharkia (10)	4:40%	4:40%	2:20%	
Kalyubia (8)	2:25%	2:25%	4:50%	
Kafr-el-Sheik (7)	5:71%	1:14%	1:14%	
Gharbia (8)	2:25%	1:13%	5:63%	
Menufia (8)	3:38%	5:63%		
Behera (11)	7:64%	1: 9%	2:18%	1: 9%
Ismailia (3)	2:67%		1:33%	
Giza (8)	6:75%	2:25%		
Beni-Suef (7)	2:29%	3:43%	1:14%	1:14%
Fayoum (5)	2:40%	1:20%	1:20%	1:20%
Minya (9)	2:22%	5:56%	1:11%	1:11%
Assiut (10)	3:30%	2:20%	5:50%	
Souhag (11)	8:73%	3:27%		
Kena (10)	5:50%	2:20%	2:20%	1:10%
Aswan (3)	1:33%	1:33%	1:33%	
Lower Egypt (67)	29:43%	18:27%	18:27%	2: 3%
Upper Egypt (63)	29:46%	19:30%	11:18%	4: 6%
Sample (130)	58:45%	37:28%	29:22%	6: 5%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 10

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 18: IF YOU DECIDE THAT THE CHILD IS INDEED MALNOURISHED, HOW THEN DO YOU MANAGE THE CASE?

- Responding: 128 of 130 centers/units (98.5%)
  Not responding: 2 (1.5%)

PROCEDURES CITED*

	N	% of Centers Responding	% of Total Centers	% of All Responses
Nutrition education/ information	92	71.9	70.7	32.5
Give medicine/ treatment	91	71.1	70.0	32.2
Food supplement when available	37	28.9	28.5	13.1
Refer severe cases to hospital	36	28.1	27.7	12.7
Advise return visit/ follow-up	15	11.7	11.5	5.3
Other	12	9.4	9.2	4.2
No treatment/nothing	1	0.8	0.8	0.4
	284			

* The categories employed were developed for coding purposes.

Note: Because multiple responses were possible, the number of responses exceeds the number of centers/units.

TABLE 11

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 36 (continued)

WHEN SUPPLEMENTARY FOOD IS DISTRIBUTED
BY GOVERNORATE AND REGION

	During Clinic Hours	After Clinic Hours	Other
Damietta (2)		1: 50%	1:50%
Dakahlia (10)	5:50%	5: 50%	
Sharkia (10)	4:40%	6: 60%	
Kalyubia (8)	2:25%	4: 50%	2:25%
Kafr-el-Sheik (7)	2:29%	4: 57%	1:14%
Gharbia (6)	2:33%	4: 67%	
Menufia (8)	2:25%	5: 63%	1:13%
Behera (5)	3:60%	1: 20%	1:20%
Ismailia (3)	1:33%	1: 33%	1:33%
Giza (8)	2:25%	6: 75%	
Beni-Suef (5)	2:40%	2: 40%	1:20%
Fayoum (5)	1:20%	4: 80%	
Minya (9)	2:22%	5: 56%	2:22%
Assiut (9)	6:67%	3: 33%	
Souhag (8)		8:100%	
Kena (9)	3:33%	3: 33%	3:33%
Aswan (3)	1:33%	2: 67%	
Lower Egypt (59)	21:36%	31: 53%	7:12%
Upper Egypt (56)	17:30%	33: 59%	6:11%
Sample (115)	38:33%	64: 56%	13:11%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 12

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

"The Ministry of Health provides some center/units with supplementary foods like Supramine, burgol, dry milk, and mixtures such as wheat soy blend. If over the past year your center/unit has not received any supplementary food from the Ministry, check (✓) here ___ and proceed to Question 44. If your center/unit has received supplementary food from the Ministry, please continue with Question 34."

Q. 34: TO WHOM IS THE FOOD GIVEN?

- Responding: 115 of 130 centers/units (88.5%)
  Not responding: 15 (11.5%)

RESPONSES* (IN ORDER OF FREQUENCY)

	Sample	Lower Egypt	Upper Egypt
Pregnant and lactating women	33 (28.7%)	15 (25.9%)	18 (31.6%)
Pregnant-lactating women, children at weaning time, and others	28 (24.3%)	10 (17.2%)	18 (31.6%)
Pregnant-lactating women and children at weaning time	23 (20.0%)	15 (25.9%)	8 (14.0%)
Children at weaning time	7 (6.1%)	5 (8.6%)	2 (3.5%)
Poor children/families	7 (6.1%)	4 (6.9%)	3 (5.3%)
Malnourished children	6 (5.2%)	4 (6.9%)	2 (3.5%)
Small children generally	5 (4.3%)	2 (3.4%)	3 (5.3%)
Families who have registered for the food	3 (2.6%)	2 (3.4%)	1 (1.8%)
Everybody	2 (1.7%)	1 (1.7%)	1 (1.8%)
No set pattern	1 (0.9%)	0 (0.0%)	1 (1.8%)
	115 (99.9%)	58 (99.9%)	57 (100.2%)

* The categories employed were developed for coding purposes.

TABLE 13

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 43: IF YOU HAD TO GUESS, WHAT USUALLY HAPPENS TO THE FOOD THAT IS GIVEN? THE RECIPIENTS.....

- Responding: 119 of 130 centers/units (91.5%)
  Not responding: 11 (8.5%)

RESPONSES (IN ORDER OF FREQUENCY)

	N	% of Centers Responding	% of Total Centers
Feed it to the entire family	52	43.7	40.0
Feed it to their very small children and others	27	22.7	20.8
Feed it to their animals and chickens	15	12.6	11.5
Feed it to their very small children	2	1.7	1.5
Sell or trade it	1	0.8	0.8
Other	20	16.8	15.4
Don't know	2	1.7	1.5

TABLE 14

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 40: FOR ABOUT HOW LONG WILL THE SAME RECIPIENTS CONTINUE TO RECEIVE SUPPLEMENTARY FOOD?

- Responding: 118 of 130 centers/units (90.8%)
  Not responding: 12 (9.2%)

RESPONSES

	N	% of Centers Responding	% of Total Centers
Less than 1 month	9	7.6	6.9
Between 1 and 3 months	30	25.4	23.1
Between 3 and 6 months	23	19.5	17.7
Between 6 and 12 months	15	12.7	11.5
More than 12 months	2	1.7	1.5
No set pattern	29	24.6	22.3
Other	10	8.5	7.7

TABLE 15

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 41: IN YOUR OPINION, IS IT FEASIBLE TO GIVE SUPPLEMENTARY FOOD TO THE SAME RECIPIENTS OVER A PERIOD OF 18 MONTHS?

- Responding: 117 of 130 centers/units (90.0%)
  Not responding: 13 (10.0%)

RESPONSES

	N	% of Centers Responding	% of Total Centers
Yes	57	48.7	43.8
No	48	41.0	36.9
Don't know	12	10.3	9.2

TABLE 16

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 41b: (IF NO) WHAT TIME PERIOD WOULD BE FEASIBLE, IN YOUR OPINION?

- Responding: 46 of 48 centers/units (95.8%)
  Not responding: 2 (4.2%)

RESPONSES (IN MONTHS)

	N	% of Centers Responding
1 month	7	15.2
2 months	4	8.7
3 months	9	19.6
6 months	11	23.9
9 months	2	4.3
12 months	10	21.7
15 months	1	2.2
36 months	2	4.3

TABLE 17

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 39: WHEN SUPPLEMENTARY FOOD IS AVAILABLE, IS IT DISTRIBUTED TO EACH RECIPIENT FAMILY ALL AT ONCE OR OVER A PERIOD OF TIME?

- Responding: 118 of 130 centers/units (90.8%)
  Not responding: 12 (9.2%)

	RESPONSES		
	N	% of Centers Responding	% of Total Centers
All at once	80	67.8	61.5
Over a period of time	30	25.4	23.1
No set pattern	4	3.4	3.1
Other	4	3.4	3.1

TABLE 18

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 42: IN YOUR OPINION, IS ENOUGH SUPPLEMENTARY FOOD MADE AVAILABLE TO YOUR CENTER/UNIT FOR YOU TO MEET POPULAR DEMAND?

- Responding: 120 of 130 centers/units (92.3%)
  Not responding: 10 (7.7%)

RESPONSES

	N	% of Centers Responding	% of Total Centers
Yes	5	4.2	3.8
Sometimes yes, Sometimes no	19	15.8	14.6
No	95	79.2	73.1
Don't know	1	0.8	0.8

RESPONSES BY REGION

	Yes	Sometimes Yes, Sometimes No	No	Don't Know
Lower Egypt (59)	4.7%	8:14%	46:78%	1:2%
Upper Egypt (61)	1:2%	11:18%	49:80%	
Sample (120)	5:4%	19:16%	95:79%	1:1%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 19

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 67: HOW TRUE OF YOUR CENTER/UNIT ARE THE FOLLOWING STATEMENTS?

RESPONSES

	N	% of Centers Responding	% of Total Centers
a. "We often lack needed personnel."			
True	28	22.8	21.5
Not true	95	77.2	73.1
Don't know	0		
No answer	7		5.4
	130		
b. "We often lack needed vaccines."			
True	33	27.3	25.4
Not true	87	71.9	66.9
Don't know	1	0.8	0.8
No answer	9		6.9
	130		
c. "We often lack needed pills and drugs."			
True	105	80.8	80.8
Not true	24	18.5	18.5
Don't know	1	0.8	0.8
No answer	0		
	130		
d. "We often lack needed supplementary foods."			
True	102	82.9	78.5
Not true	21	17.1	16.2
Don't know	0		
No answer	7		5.4
	130		

TABLE 20

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 37: WHEN FOOD IS DISTRIBUTED, ARE RECIPIENTS OF PRESCHOOL AGE (CHILDREN UNDER 5) WEIGHED OR GIVEN A MEDICAL CHECK-UP?

- Responding: 118 of 130 centers/units (90.8%)
  Not responding: 12 (9.2%)

RESPONSES

	N	% of Centers Responding	% of Total Centers
Yes, the children are weighed.	5	4.2	3.8
Yes, the children are given a medical check-up.	11	9.3	8.5
Yes, both	7	5.9	5.4
No	60	50.8	46.2
No set pattern	34	28.8	26.2
Other	1	0.8	0.8

TABLE 21

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 21: HOW TRUE OF YOUR CENTER/UNIT ARE THE FOLLOWING STATEMENTS?

a. "WE FOLLOW UP ON CASES ONLY WHEN THEY RETURN TO THE CENTER/UNIT."

- Responding: 130 centers/units (100%)

RESPONSES

	True	Mostly True	Not True	Other
Damietta (2)		1:50%	1:50%	
Dakahlia (10)	4:40%	4:40%	2:20%	
Sharkia (10)	3:30%	5:50%	2:20%	
Kalyubia (8)	2:25%	3:38%	3:38%	
Kafr-el-Sheik (7)	3:43%	3:43%	1:14%	
Gharbia (8)	3:38%	1:13%	4:50%	
Menufia (8)	1:13%	3:38%	4:50%	
Behera (11)	7:64%	2:18%	2:18%	
Ismailia (3)	2:67%	1:33%		
Giza (8)	5:63%	2:25%	1:13%	
Beni-Suef (7)	4:57%	2:29%		1:14%
Fayoum (5)	3:60%	1:20%		1:20%
Minya (9)	2:22%	6:67%		1:11%
Assiut (10)	6:60%	1:10%	3:30%	
Souhag (11)	9:82%	1: 9%	1: 9%	
Kena (10)	5:50%	1:10%	2:20%	2:20%
Aswan (3)	1:33%	1:33%	1:33%	
Lower Egypt (67)	25:37%	23:34%	19:28%	
Upper Egypt (63)	35:56%	15:24%	8:13%	5: 8%
Sample (130)	60:46%	38:29%	27:21%	5: 4%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 22

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 20 a, b, c: DO YOU OR YOUR NURSE OR ANYONE ELSE ON YOUR STAFF OFFER HEALTH EDUCATION TO PEOPLE ON THE FOLLOWING SUBJECTS?

- Responding: 129 of 130 centers/units (99.2%)*
  Not responding: 1 (0.8%)

SUBJECT AND RESPONSE

	Yes, to Individuals	Yes, to Groups	Yes, to Both	Very Rarely Or Not at All
a) Good health habits	58 (45.3)	8 (6.3)	53 (41.4)	9 (7.0)
b) Nutrition of mothers and children	68 (52.7)	9 (7.0)	43 (33.3)	9 (7.0)
c) Family planning	59 (45.7)	9 (7.0)	51 (39.5)	10 (7.8)

* Only 128 centers/units responded on the subject of good health habits.

Note: Numbers in parentheses are the percentage of responding centers/units giving each response.

TABLE 23

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 38 (continued)

WHETHER MOTHERS RECEIVING FOOD ARE GIVEN A LESSON
BY GOVERNORATE AND REGION

	Every Time	Usually	Sometimes	Rarely	Never
Damietta (2)	1:50%				1:50%
Dakahlia (10)	3:30%	2:20%	1:10%	2:20%	2:20%
Sharkia (9)	2:22%		1:11%	3:33%	3:33%
Kalyubia (8)	4:50%	3:38%			1:13%
Kafr-el-Sheik (6)	1:17%	1:17%	-	1:17%	3:50%
Gharbia (6)		2:33%	2:33%	1:17%	1:17%
Menufia (8)		2:25%	1:13%	1:13%	4:50%
Behera (5)	1:20%	4:80%			
Ismailia (3)		1:33%	1:33%		1:33%
Giza (8)	3:38%	1:13%	1:13%	1:13%	2:25%
Beni-Suef (6)		2:33%	3:50%		1:17%
Fayoum (5)	1:20%	1:20%		2:40%	1:20%
Minya (9)	1:11%	2:22%	2:22%		4:44%
Assiut (10)		5:50%			5:50%
Souhag (9)		6:67%	1:11%		2:22%
Kena (10)	2:20%	2:20%	1:10%		5:50%
Aswan (3)		1:33%			2:67%
Lower Egypt (57)	12:21%	15:26%	6:11%	8:14%	16:28%
Upper Egypt (60)	7:12%	20:33%	8:13%	3: 5%	22:37%
Sample (117)	19:16%	35:30%	14:12%	11: 9%	38:33%

Note: Numbers in parentheses are the total number of centers/units in the sample that responded to this question.

TABLE 24

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 38a: (IF YES) ON WHAT?

- Responding: 65 of 68 centers/units (95.6%)
  Not responding: 3 (4.4%)

RESPONSES*

	N	"Sometimes" or More Often	% of Total Centers	% of All Responses
How to prepare the food	46	70.8	35.4	32.4
Value of the food	31	47.7	23.8	21.8
General nutritional advice	30	46.2	23.1	21.1
Whom to give the food	20	30.8	15.4	14.1
Other	15	23.1	11.5	10.6
	142			

* The categories employed were developed for coding purposes.

Note: Because multiple responses were possible, the number of responses exceeds the number of centers and units responding. The statistics cited are for the facilities that responded "sometimes," "usually," or "everytime" to Q. 38. Two centers/units which did not respond to Q. 38 and eight centers/units which responded "rarely" to Q. 38 did respond to Q. 38a but are not included in this tabulation.

TABLE 25

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 83: IN YOUR OPINION, ARE THE FOLLOWING STATEMENTS TRUE OR NOT TRUE?

RESPONSES

	N	% of Centers Responding	% of Total Centers
a. "There are many difficulties in providing health care to rural people."			
True	91	73.4	70.0
Not true	33	26.6	25.4
Don't know	0		
No answer	6		4.6
	130		
b. "Staff morale at the center/ unit is sometimes quite low."			
True	82	65.1	63.1
Not true	43	34.1	33.1
Don't know	1	0.8	0.8
No answer	4		3.1
	130		
c. "We offer services. It is up to the public to decide whether to use them."			
True	80	65.0	61.5
Not true	37	30.1	28.5
Don't know	6	4.9	4.6
No answer	7		5.4
	130		
d. "Administering a rural health center/unit is quite time-consuming."			
True	95	76.0	73.1
Not true	29	23.2	22.3
Don't know	1	0.8	0.8
No answer	5		3.8
	130		

TABLE 25 (Continued)

MIT-Cairo University Health Care Delivery Systems Project
Health System Questionnaire: Part I
March 1978

Q. 83 (continued)

RESPONSES

	N	% of Centers Responding	% of Total Centers
e. "To really meet the people's needs, health care must be taken outside the center/ unit itself."			
True	88	71.0	67.7
Not true	30	24.2	23.1
Don't know	6	4.8	4.6
No answer	6		4.6
	130		
f. "Working in a rural area is quite enjoyable."			
True	66	53.7	50.8
Not true	55	44.7	42.3
Don't know	2	1.6	1.5
No answer	7		5.4
	130		
g. "People who do not come to the center/unit should not receive health care from the center/unit."			
True	64	52.0	49.2
Not true	58	47.2	44.6
Don't know	1	0.8	0.8
No answer	7		5.4
	130		
h. "I personally wish I were working in a more modern environment."			
True	67	53.2	51.5
Not true	56	44.4	43.1
Don't know	3	2.4	2.3
No answer	4		3.1
	130		