ORIGINAL

Evaluation and Projections for the Primary Health Care System in Bahrain

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I. EVALUATION IN PRIMARY CARE

IN a recent article on the evaluation of medical practices Fineberg & Hiatt (1) emphasize that "even when an evaluation convincingly demonstrates that an existing technology is ineffective, . . . changes in practice may be long in coming." Diethylstilbestrol was used to prevent miscarriages, but eighteen years before the carcinogenic risk of diethylstilbestrol was discovered, a large study showed that it failed to prevent miscarriages. But physicians continued to prescribe it for miscarriages.

This and other examples highlight the need for evaluation before accepting any new technology. This is particularly true for primary health care.

In evaluation we make a value judgment based on information about the *efficacy* of a therapeutic or preventive modality, like efficacy of a vaccine or drug, the effectiveness of a program or how well a program achieves its claimed objectives and the *efficiency* of use of resources or how good is the result compared to the inputs. Thus if we are determining the efficacy, efficiency or effectiveness of a method or program, we are evaluating.

In primary health care the total system can be evaluated by assessments of its structure, process and outcome.

The *structure* of the system, or its inputs includes resources, facilities, manpower, equipment etc. The assessment of the quality of these inputs can be part of such a total evaluation of the system.

The *process* of care incorporates the activities and procedures within the system. For example people agree on what primary health care has to provide, but major differences exist on *how* primary health care has to be provided. What are the best approaches and methods in providing primary health care services? This is an issue relevant to the evaluation of the process of care. A questionnaire study in Baltimore of pediatricians and general practitioners indicated that significant differences exist between these two groups in how they manage acute sore throats in children and how they treat streptococcal pharyngitis (2). A study comparing English and American general practitioners revealed major differences in approaches in the process of care between the two (3). Which of the two approaches is the better one? Thus, evaluation of the process of care becomes sterile if it is not linked with an evaluation of outcome.

In medical care the *outcome* of care is usually measured by deaths, disease episodes or disability. How much of each is prevented and how is the natural history of illness being affected by the processs of care? In primary health care a majority of patient illnesses are self limited, thus, these are not affected by the process of care in terms of morbidity or mortality. Patients will be fine whatever you do to them, thus outcome indicators other than mortality and morbidity will be needed in primary health care. Patient satisfaction is one such additional outcome indicator.

II. STUDIES OF EVALUATION IN PRIMARY HEALTH CARE IN BAHRAIN

Over the past few years several studies have been conducted to evaluate the different aspects of the primary health care system in Bahraini.

a. *Studies of Structure* : In order to assess whether initial objec-

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tives in the provision of adequate manpower has been achieved, a review was done of the different categories of manpower working in the health centers in 1979 (4) and this was compared with our projections for the development of the health centers as presented to the Ministry of Health in September 1977 (5). As illustrated on table I, except for a discrepancy in the number of recruited aides, almost all that has been projected in manpower in 1977 has been achieved in 1979 in Bahrain.

b. *Studies of Process of Care* : In order to determine whether the process of patient care is influenced by the introduction of a peer review activity or the use of standardized medical record forms, fifty records each, were reviewed from the month preceding a peer review activity (conducted by the health center physicians), the month following the peer review activity and, the month following the introduction of itemized medical record forms. As presented on tables 2 and 3 both the peer review activity and the introduction of the new itemized medical records were effective in improving the quality of the medical record. Regarding the quality of the management process there was no significant change following both activities. Thus, peer review activities were not considered effective in introducing change in quality and emphasis was placed on other methods.

Another study that has a critical look at the process of care within the health centers is the study by Dr. Alan Fawdry published in the Bahrain Medical Bulletin in March 1980 (6). This study attempted at categorizing the presenting problems of patients by he type of health care needed, using the intrinsic judgment of a physician in the health center.

c. *Studies of Outcome* : It is very important to have an on going information system that will provide timely data in order to link the structure and process of the system to its outcome. Table 4 has comparative data on morbidity as it presented to the general practitioner in Bahrain and the United Kingdom.* Another study looking at outcome was conducted by one of our students in 1976 as part of her M.S. epidemiology thesis requirements (7). In a case-control study using data from the Isa Town ealth Center, it was demonstrated that increased use of the health center does not decrease the hospital admission rate, contrary to a widespread belief by planners and administrators. (If you provide a well balanced diet to everyone at home, it does not mean that this will decrease the use of restaurants).

Several other evaluative studies of primary health care have been conducted in Bahrain over the past few years. These have included patient surveys, record surveys, reviews of statistics, prescriptions etc. It is not possible to review all these studies.

III. FUTURE PROJECTIONS

The main purpose of evaluation is to provide feedback in order to introduce change.

On September 1978, a working paper was presented to the Ministry of Health on the Primary Health Care System in Bahrain (8). In this document emphasis was placed on the development of a continuing education program for health center physicians, the implemenation of the Family Practice Residency Program, the initation of a community nursing program and the total registaration of Bahraini families as new targets for the primary health care system to be achieved within few years. As you may be aware most of these targets have been attained. But it is also important to emphasize that two other areas projected in that same document have not seen any dramatic changes. There is as yet no defined financing and information system using the resources of the primary health care network itself. These are two areas that will be emphasized at present. Good and timely health and financial information is basic for management at the central and peripheral levels.

Based on previous assessments, the following are some personal projections for the future of the primary health care system in Bahrain.

a. *The development of constructive competition among providers of health care.* In a recent study from Minneapolis — St. paul (9), it has been found that competition has helped "to contain costs and improve access to medical services. At the same time it has focused attention on consumer satisfaction with medical services, increased the range of consumer choice and given consumers better information about providers". The environment within the Ministry of Health in Bahrain is such that experimentation in the development of newer

*The recent data on visits to the Ibn Sina Health Center in 1979 has been collected by the first year Family Practice Residents.

methods of delivery of health services is constantly encouraged. It is important that methods be developed where incentives are given for the providers of the most effective and efficient operation in the health centers. Within the publicly supported system of Bahrain, the development of such methods presents a real challenge.

b. *Decentralization and autonomy of decision making at the health center level* will be a natural byproduct of the development of a comprehensive information system and a policy to develop constructive competition in the health centers. It is with a certain amount of decentralization that alternative approaches in health care delivery could be experimented with.

c. *The management of subclinical health problems* is where future activities of the primary health care system in Bahrain will concentrate. Most of the health problems do not present at the clinic but are rampant in the community. Bahrain presents an ideal situation where more of the iceberg of disease could be discovered and managed early, before irreversible changes take place. Screening for well defined conditions is part of the routine in many primary care practices and it does not require extensive resources as demonstrated by successful hypertension screening programs within general practice in the United Kingdom.

In conclusion the following quote from an editorial in the Lancet (10) highlights the future approaches needed from primary care physicians :

Primary care was still a public service privately administered and would remain so . . . Each practice was at the mercy of the vigour or indolence that each doctor brought to it . . . younger doctors who would be the innovators of their generation (are asked) to do more than excellent transactional care, which they were already doing, and to begin to explore this new dimension of anticipatory care of whole populations. If they could solve the organizational and social problems of bringing the form of practice into harmony with its full potential content, they would have solved the main medical problem of our time."

TABLE 1

1979 Manpower of the Health Centers of Bahrain as Projected in 1977 and the Actual Figures for 1979

Position	Projected	Actual
Physicians	80	75
Dentists	13	6
Staff Nurses	46	64
Public Health Nurses	12	14
Practical Nurses	43	35
Auxiliary and Aides	151	106
Admin. Supervisors	8	6
Pharmacy Technicians	50	49
Lab. Technicians	5	7
Asst. Lab. Technician	12	4
Clerks	70	62
Drivers	28	36
Naturs	32	39
Cleaners	77	81
Telephone Operators	8	7
Gardeners	4	4
	639	595

TABLE 2

Number of Records Judged Adequate for the Three Study Groups (Numbers in Brackets Refer to the Number of Records with the Particular Item Present)

Item	Baseline	Post Peer Review	Post Itemized Record
	N = 50	N = 50	N = 50
Present illness	29	29	21
Past history	8	10	15[a]
Family history	4	11	21[b]
Social history	2	4	7
Physical examination	25	21	26

For comparisons of post peer review and post itemized record :

a - X^2 7.92, $p < .01$
b - X^2 10.31, $p < .01$

TABLE 3

Number of Medical Records Judged to have Adequate Entries for the Items referred in the Three Study Periods

Parameters Evaluated	Baseline	Post Peer Review	Post Itemized Record
	N = 50	N = 50	N = 50
Diagnosis	31	36	37
Diagnostic tests*	7	8	10
Referral*	5	1	3
Findings**	6	3	4
Screening tests*	4	5	2
Optimal care	18	24	16
Outcome***	9	7	15

* Refers to presence only. No judgements on quality made.
** Positive findings that did not elicit physician's response.
*** Instances where changes in patient management could have affected a change in outcome.

TABLE 4

Number of Persons Consulting in a Year in a General Practice of 2,500 Persons

	Persons Consulting Per Year		
	Isa Town 1976	**Ibn Sina 1979**	**British General Practice**
Upper respiratory infections	900	1300	500
Common gastrointestinal ailments	700	600	250
Skin disorders	350	250	225
Emotional disorders	50	10	200
Chronic rheumatic conditions	200	350	100
High blood pressure	50	100	25

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