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A Framework for Building Competency: Improving the Quality of Care at the Primary Health Level

Introduction

A vast majority of the Indian population lives in rural areas. The quality of care afforded by primary health centres (PHCs) is an important determinant of the health of the people, and a reflection of the country's health status. Quality of care (QoC) has rightfully attracted the attention of health care professionals all over the world. Policy-makers in India too realize that it is necessary to consider QoC while assessing the performance of health and family welfare programmes.

A comprehensive evaluation of family welfare services at PHCs across the country (ICMR, 1991) showed that the quality of the services offered was poor. It underlined the urgent need to equip health care personnel with better skills and facilities to improve their performance.

The outcome of the 1994 Workshop on Quality of Services in the Indian Family Welfare Programme, organized at the Indian Institute of Management, Bangalore, convinced policy-makers, programme managers and researchers that maintaining and improving service provider competency is essential for improving QoC (Koenig and Khan, 1999). Without competent employees, it is difficult to harvest good productivity, irrespective of the sophistication in the technological or infrastructural resource base, argue Handa, Sood and Bagga (2004). Inadequate skills and facilities at the lower levels of the health care system result in the underutilization of personnel, and emerge as sources of dissatisfaction among its users. It also results in complicated cases at the lower-level health care facilities being referred to the higher-level health care facilities (Matthews et al., 2001), fuelling further underutilization of personnel.

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The main objective of this paper is to identify the competencies required to improve QoC, with a focus on primary care. The review article also looks at the process of competency building and offers a competency-building framework for improving the quality of primary health care.

Quality of Care

According to the World Health Organization, QoC is "...proper performance (according to standards) of interventions that are known to be safe, that are affordable to the society in question, and that have the ability to produce an impact on mortality, morbidity, disability, and malnutrition (Roemer and Montoya-Aguilar, 1988: 54)." The US-based Institute of Medicine's Committee to Design a Strategy for Quality Review and Assurance in Medicare defines quality of care "as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Lohr, 1999: 21)."

Competency

Though not the sole determinant, competency has a major influence on the performance of the health care provider. Knowledge, skills and attitudes (KSA) comprises the three elements of competency. Dubois and Rothwell (2004) warn that the "attitudes" element of the KSA triad must not be oversimplified when identifying the competencies required for successful performance in a job. While knowledge means knowing what behaviour is appropriate in a given situation, skill refers to possessing the ability to behave in the desired way in a given context. Motivation implies having the desire to communicate in a competent manner. For example, communication competence is the ability to choose a communication behaviour that is both appropriate and effective for a given situation. Interpersonal competency allows one to achieve their communication goals without causing the other party to lose face (Spitzberg and Cupach, 1984). Regulators in Canada also include *judgment* as an element of competency (Laurier, 2000).

Some definitions of competence address performance. Sullivan (1995) defines competency as skilled performance up to specific standards under specific conditions. As per UNIDO (2002: 8), attributes that allow an individual to perform a task or an activity within a specific function or job comprise competency. Marshal (1999: 51) defines competency as "an underlying characteristic of a person which enables (him/her) to deliver superior performance in a given job, role or situation." According to Kak, Burkhalter

and Cooper (2001: 1), the competence of a health care provider is represented by conformance with various clinical, non-clinical and interpersonal standards.

Types of Competencies

Essential Competencies: The UNIDO (2002: 10) model categorizes essential competencies as: *(a*) managerial, *(b)* generic and *(c)* technical/functional. Anderson and Pulich (2002) identify planning, organizing, leading and controlling as the set of managerial competencies necessary in today's dynamic health care environment. Marshal (1999) groups competencies as: *(a)* threshold and *(b)* differentiating. While, *threshold competencies* (such as product knowledge, computational skills) enable a job-holder to do the job effectively, it is *differentiating competencies* (such as customer orientation, ability of salespersons to place themselves in the shoes of the potential buyer of the product) that make for superior performers.

Core Competencies: Core competencies of successful physician executives comprise skill sets such as: *(a)* leadership (inspiration, vision and motivation), *(b)* technical (knowledge, information systems and conflict resolution), and *(c)* management (change, uncertainty and expectations). These core competencies have a *capability continuum* that make them special and valuable to the organizations (Lazarus, 2002). Freshman and Rubino (2002) identify emotional intelligence as a core competence of health administrators.

Cultural Competence: Cultural competence is "the ability of systems to provide care to patients with diverse values, beliefs, and behaviors, including tailoring delivery to meet [the] patients' social, cultural and linguistic needs (Betancourt, Green and Carrillo, 2002: 2)." Since culture influences an individual's health beliefs, behaviour, activities and treatment outcomes, it is desirable that health care professionals also be culturally competent. Cultural competency assumes greater significance while dealing with patients from certain castes, tribes and religious groups.

Level of Competencies

UNIDO (2002: 11) delineates competencies according to the level of application. The different levels of application are: *(a)* knowledgeable (work activities are often carried out under guidance), *(b)* proficient (can perform work without guidance; work activities are performed effectively within

quality standards), and *(c)* advanced (work activities consistently conform with high-quality standards; can also perform the roles of advisor and trainer).

The iceberg model (Marshal, 1999: 51) delineates different levels of competencies as enumerated below:

- ***Skills:*** things that people can do well.
- ***Knowledge:*** what a person knows about a specific topic.
- ***Social role:*** the image that an individual displays in public. It represents what he/she thinks is important and reflects the values of the person.
- ***Self-image:*** the view people have of themselves; it reflects their identity.
- ***Traits:*** enduring characteristics of people. They reflect the way in which we tend to describe people; these characteristics are the habitual behaviour by which we recognize people.
- ***Motives:*** unconscious thoughts and preferences that drive behaviour.

Competency Need Assessment

Competency need assessment (CNA) is the first step in competency building to improve the quality of care. It entails identifying the competencies that health care providers are required to possess. Useful inputs for conducting a CNA can be drawn from a variety of sources: *(a)* job functions, *(b)* QoC frameworks, *(c)* user perspective, *(d)* opinion of health care providers, and *(e)* research studies.

Job Functions

Over a period of time, a number of changes have taken place in India's health and family welfare programmes. These, among others, include: *(a)* conversion of uni-purpose workers into multi-purpose workers, *(b)* integration of vertical programmes into the overall health care delivery system, *(c)* initiation of new programmes, *(d)* emergence of broader concepts of reproductive and child health, and *(e)* introduction of new technologies. These and other changes require that service providers, at different levels, update their knowledge, acquire new skills and, more importantly, fine-tune their attitudes in consonance with the changing expectations.

Nair et al. (2001) observed that key national health programmes (which focus on tuberculosis and acute respiratory infection) were neglected by all multi-purpose workers (MPWs) as they were not properly trained. On the other

hand, studies on the integration of the National Leprosy Eradication Programme (NLEP) with the general health care delivery system have shown that the knowledge of health care workers regarding the signs and symptoms of leprosy, types of leprosy, duration of treatment and how to deal with cases of reaction is satisfactory. Over 90 per cent of the sub-centre health workers said that they had no problems with carrying out leprosy-related work (DANLEP, 2003).

Selective introduction of new technologies (like the use of palmtops by ANMs for improved record-keeping) is mainly dependent on their attitudes toward new technologies besides the motivation to acquire the requisite skills (Anantraman et al., 2002: 4–5). However, such initiatives pose special challenges because while a part of the system becomes efficient due to the new skills acquired and the new technologies introduced, the remaining portion continues with the older, less efficient practices.

QoC Frameworks

Important frameworks proposed by Bruce (1990) and Donabedian, the latter cited by Turner and Pol (1995), recognize that technical knowledge and skills, and the interpersonal relationships of health care providers are important prerequisites for improving the quality of care. However, these competencies need to be supported by adequate amenities, equipment and infrastructure facilities.

User Perspectives

The experiences of users are a good reflection of the competencies required of health care providers. In the case of auxiliary nurse midwives (ANMs) at the sub-centers, adequate knowledge and skills are expected with respect to: *(a)* prescribing appropriate medicines for common ailments and various diseases which cause complications in pregnancy, and *(b)* handling complications that may arise from the use of intra-uterine devices (IUDs) and oral pills (Mittra, Nair and Gandotra, 2000). A study conducted in Delhi (Gangopadhyay and Das, 1997) identified that health care providers should not only have the right knowledge but also counselling skills (to correct misperceptions, e.g., a copper-T can travel inside the body; and to address anxieties about pain or bleeding). They should be able to handle the side effects and failure of contraception. A patient satisfaction survey in Andhra Pradesh highlighted the need for communication and interpersonal skills among service providers (Mahapatra, Srilatha and Sridhar, 2001).

Opinion of Health Care Providers

A combined assessment by *(a)* self, *(b)* immediate supervisor and *(c)* functionaries working under them provides a comprehensive approach for assessing the training needs of health functionaries (Rao, 2000).

Self-assessment: Several workers in Karnataka desired training to improve their technical competencies, like insertion of IUD, and diagnosis and treatment of gynecological and reproductive health problems and common illnesses. Interpersonal skills, like motivating people, were also mentioned (Bhatia, 1999). In Gujarat, health workers (male and female) desired regular refresher training courses on communication skills for effective counselling (Gandotra et al., 1997).

Another study also revealed that 84 per cent of health care providers (workers, supervisors and medical officers) at the PHC level had low communication skills (Bahl and Trakroo, 1996). A training needs assessment (TNA) study in Uttar Pradesh (CORT, 1996: 35) stressed the need for changing the attitudes and beliefs of ANMs and lady health visitors (LHVs) in Uttar Pradesh so that they can send appropriate messages to the community. The training of ANMs aimed at quality improvement should include: *(a)* problem-solving skills, *(b)* use of data for decision-making and planning, *(c)* working in a team, and *(d)* contextual approach to quality (Visaria and Visaria, 1998).

Assessment by supervisors: By virtue of their close interaction, immediate supervisors are a good source to identify the need for improvement in the competencies of persons working under them (CSD, 1997).

Research Studies

An all-India study of PHCs revealed that lack of appropriate knowledge is the main cause for the absence of routine examinations during intra-natal care and of procedures for screening and pre-operative care among acceptors of sterilization (ICMR, 1991). A number of independent observations and research studies (Koenig and Khan, 1999) postulated that lack of competence among the service providers is the principal cause of the abnormally high failure rate of sterilizations, infection rate after MTP/sterilization, absence of screening/checking for reproductive tract infection (RTI) before inserting IUDs, improper methods used for drawing medicine from vials by nurses, and repeated use of needles and syringes, laparoscopes, razor blades, and enema sets.

Skill development had been the weakest in the case of technical skills—conducting deliveries, care of the newborn, IUD insertions, tubectomies, vasectomies and MTPs. It is also necessary to enhance the communication and managerial skills of all health care providers. Training in these areas has also been found to be particularly deficient in both content and methodology (MHFW, Govt. of India, 1996). A major reason why temporary family planning methods are not widely used at present is that ANMs lack the requisite motivation, technical skills and knowledge (World Bank, 1996). This can be corrected by providing relevant and appropriate training to build the competency of ANMs.

Ramasundaram (1994) attributed the poor quality of care by government health functionaries to their attitudes even when equipment and supplies are made available. They showed little respect for clients, especially if they were poor, illiterate or from the lower strata. A study conducted in Kerala reported that the behaviour of clinical staff appeared to improve with the socio-economic status of patients (Homan and Thankappan, 1999).

However, Mavalankar and Sharma (1999) reported how a general surgeon from a community health centre (CHC) in Gujarat adapted a laparoscope to the rural situation. He used an ordinary flashlight bulb and procured five laparoscopes from other centres where they were not being used to improve the quality of care and also reduce costs. This reflects the importance of individual attitude and motivation in improving QoC.

Competency Gap

Competency need assessment (CNA) goes beyond identifying the competencies required for the job. It also entails assessing the gap between the existing level and desired level of competencies. Bartram and Gibson (1997) used rankings from 0 to 3 to quantify competencies (0 = No experience of this task; 1 = Being trained in this task; 2 = Can do this task without supervision; and 3 = Able to train others in this task).

Provider-Competency Matrix

Based on the review of CNA in the preceding part and coupled with the author's experience, a provider-competency matrix for improving QoC at the primary health care level is presented in Table 1. The competencies required of health care providers are grouped as: *(a)* knowledge, *(b)* skills (technical, managerial and beneficiary-related), and *(c)* attitudes.

Table 1: **Provider-Competency Matrix at the Primary Care Level**

Competency		*Health Care Provider*					
		MO	*LHV*	*Pharmacist*	*ANM*	*BEE*	*LT*
Knowledge	Job functions	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓
	Symptoms of common diseases	✓✓✓✓✓	✓✓	X	✓✓✓✓	✓✓	X
	Standard treatment protocols/guidelines	✓✓✓	X	X	✓✓	X	X
	Products (drugs/contraceptives)	✓✓✓	✓✓	✓✓✓✓	✓✓✓	X	X
Technical Skills	Curative care–safety	✓✓✓✓✓	✓✓	X	✓✓✓	X	X
	Surgical and other procedures (like IUD insertion)	✓✓✓	✓✓	X	✓✓✓	X	X
	Public health-related activities	✓✓✓	✓✓✓✓✓	X	✓✓✓	✓✓✓✓	✓
Managerial Skills	Leadership	✓✓✓✓✓	✓✓✓	X	✓	✓✓	X
	Problem solving	✓✓✓✓	✓✓✓✓	✓	✓✓	✓✓	✓
	Monitoring and supervision	✓✓✓	✓✓✓✓✓	X	✓	✓✓✓✓	X
	Planning	✓✓✓✓✓	✓✓✓✓✓	✓✓	✓✓✓	✓✓✓✓✓	✓✓
	Material management and logistics	✓✓✓	✓✓	✓✓✓✓✓✓	✓✓	✓✓	✓✓✓
	Maintaining registers	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓
	Analysis and reporting	✓✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓
Beneficiary Skills	Interpersonal communication and counselling	✓✓✓	✓✓✓	✓✓	✓✓✓✓✓✓	✓✓✓	✓
	Group/mass communication	✓✓	✓✓✓	X	✓✓	✓✓✓✓✓✓	X
	Cultural competency	✓✓✓	✓✓	X	✓✓✓✓	✓✓✓✓	X
Attitudes	Equity (gender, class)	✓✓✓	✓✓	✓✓	✓✓✓✓	✓✓	✓✓
	Dignity and privacy	✓✓✓✓	✓✓	X	✓✓	X	✓✓
	Empathy	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
	Commitment to work	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓

Note: MO: Medical officer; LHV: Lady health visitor; ANM: Auxiliary nurse midwife; BEE: Block extension educator; LT: Lab technician;
✓ Degree of relevance of a particular competence; X: Particular competency is not applicable.

Knowledge: This segment of competency includes knowledge of job functions, symptoms of common diseases, standard treatment protocols/ guidelines, and drugs/contraceptives. Knowledge of job functions is essential for all categories of health care functionaries. Medical officers (MOs) need to be most knowledgeable; ANMs are expected to be quite knowledgeable; while LHVs and block extension educators (BEEs) must have rudimentary knowledge about the symptoms of common diseases.

Skills: PHC functionaries require three types of skills: technical, managerial and beneficiary-related. Each skill set is explained below.

- *Technical skills:* The gamut of technical skills required for primary health care include curative care of common ailments; minor surgical skills and procedures like IUD insertion; and public health-related activities like sanitation, chlorination of drinking water sources, spraying of insecticide, etc. While curative care and surgical procedures are crucial to medical officers, for LHVs and ANMs, IUD insertion is most important. For field supervisors and BEEs, public health activities are more relevant.

- *Managerial skills:* Managerial skills relevant for health care providers at the PHC level are leadership, problem solving, monitoring and supervision, planning, material management and logistics, maintaining registers, analysis and reporting of data. As managers of PHCs, medical officers require leadership, planning and problem-solving skills in abundance. In their supervisory roles, LHVs and BEEs need skills of monitoring and supervision, problem solving, maintaining registers and data analysis. Health workers like ANMs require skills like planning, and maintaining registers. Skills of material management and logistics are more relevant to pharmacists but are also useful to MOs and supervisory staff.

- *Beneficiary-related skills:* Interpersonal communication is equally relevant to all PHC staff. LHVs and BEEs need both interpersonal and group communication skills. Cultural competency is another area where MOs, LHVs and ANMs need to improve upon.

Attitudes: Even if the health care provider has relevant knowledge and skills, the QoC may not be up to the mark because of the lack of appropriate attitudes. Gender sensitivity, dignity and privacy are important for MOs and BEEs, who are often males. Empathy and commitment to work are equally relevant to all, though in varying degrees.

Competency Building

Service providers acquire competencies at different stages, namely: *(a)* formal education (degree/diploma) prior to joining service, *(b)* in-service training, and *(c)* on the job. The national training policy prescribes both induction training and in-service training for government servants and recommends that these be linked with career progression (MPPGP, Govt. of India, 1996).

Formal Education

Recruitment of people with the required competencies is obviously the first step in the competency building process. This depends on the ready availability of people with the requisite competencies, which, in turn, depends on the state of the education system.

Medical Education

Unfortunately, the curriculum of medical courses in India has not kept pace with the fast-changing knowledge, skills and technology deployed for the diagnosis and treatment of diseases. Medical graduates and even post-graduates are found deficient in clinical skills and problem-solving abilities due to inadequate provision of faculty, equipment, and financial and other resources in both government and private medical colleges. Much has been talked and written about the unregulated growth of private medical colleges, and not without merit. But qualitatively, the average government medical colleges today appear to be not very different form their private counterparts in producing inadequately prepared doctors. Moreover, exposure to behavioural sciences and managerial and communication skills receives no attention (Sood and Adkoli, 2000), depriving medical graduates and post-graduates of systems and people management competencies. The National Health Policy, 2002 (MHFW, Govt. of India, 2002) does acknowledge many, but not all, of the weaknesses of medical education in India. Therefore, as Mavalankar (1996: 13) argues, employing (supposedly) qualified staff by itself does not ensure the technical competence needed for the job.

Para-medical Education

In a survey, nurses working in PHCs in Andhra Pradesh reported that their educational training was not very useful in the work environment and strongly expressed the need for more practical training (Ratnam, 2001). The situation may not be very different in other parts of the country. More problematic is

the fact that the education of auxiliary nurse midwives has also suffered due to a reduction in the training period (in spite of their increasing role in grass-roots programmes), introduction of stepladder courses and reduction in minimal training standards (Iyer and Jessani, 1999). The reduced period is considered inadequate to prepare ANMs for work at the village level (Deodhar, 1994). It has also affected the confidence and efficiency of the recruits (Prakasamma, 1989).

Paradoxically, India produces more doctors than nurses. This compounds patient risk as a number of private and public health care institutions use individuals who have been trained on the job rather than professionally-trained nurses (Ranson and John, 2001). Not surprisingly, a survey found that unregistered ANMs accounted for 71 per cent of all recruits during the 1980s in Maharashtra (Iyer and Jesani, 1995). Nightmarish, isn't it? There is no denying the wisdom in Laurier's (2000) argument that it is necessary to adopt competency-based assessment rather than solely depend on academic qualifications. However, there is little doubt that comfort levels in health care will only increase if the recommendation of the 2002 WHO regional consultation for developing a framework to formulate National Standards for Educational/Training Institutions and Programmes in Public Health is taken seriously. It recommends that institutions must define what competencies its students should exhibit on graduation (WHO, 2002: 28).

Training

Training "is a short-term learning intervention. It is intended to build on individual knowledge, skills, and attitudes to meet present or future work requirements (Dubois and Rothwell, 2004: 48)." Theoretically, after taking up a job, individuals do get opportunities to upgrade their knowledge and skills through a variety of in-service training programmes at different stages: *(a)* induction, *(b)* mid-service, *(c)* post-promotion and *(d)* orientation. Let us examine the implications of this training in the context of health care:

- *Induction training:* The purpose of induction training is to initiate new entrants into the job itself besides organizational systems, procedures, etc. P. H. Rao (2001: 6) found that sometimes the interval between an individual joining a health care institution and his/her induction training is more than a year. An earlier study found that a substantial proportion of individuals in health care institutions do not receive induction training at all (CSD, 1997).

- *Mid-service training:* A study conducted in Uttar Pradesh found that ANMs and lady health visitors (LHVs) were fed up with frequent training sessions. They found the sessions to be theoretical and repetitive, hence boring, and not very applicable in service delivery (CORT, 1996: 36). Assessing child survival and safe motherhood (CSSM) training at different levels, Mavalankar and Reddy (1996) advised skill improvement in human resources that would result in improved staff-patient relationships, attitudes towards work, work culture, commitment to the organization, and pride in the job.

  An evaluation of medical termination of pregnancy (MTP) training in three states led Khan et al. (1998) to conclude that the quality of training was not up to the mark because of low MTP case-load in the designated training institutions on the one hand, and the low priority given to MTP trainees compared with resident doctors/MD students, on the other. An evaluation of the training of *dais* (community-based women who traditionally assist in deliveries at home) by the district training teams found non-cooperation of staff at district hospitals responsible for depriving opportunities to dais for conducting deliveries. At some places, they were not even allowed to enter the labour rooms (MODE, 1995).

- *Post-promotion training:* Like other government servants, those in the health care area in India are promoted more on the basis of seniority than competence. Post-promotion, the new promotees do not receive any training that equips them to discharge the new, higher-level responsibilities. The Government of India did launch a Professional Development Course in 2001 for individuals on the verge of being promoted as chief medical officers. Happily, an evaluation of the course revealed that 61 per cent of the trainees personally attempted new tasks based on the new knowledge and skills gained during the training (Yesudian and Mukherjee, 2003:18).

- *Orientation:* This kind of training is used to expose and orient health care providers to new programmes that are launched by the Government of India from time to time. For example, as a strategy, administrators at the state and district levels were trained at the time of the launch of the Reproductive and Child Health–II (RCH-II) programme in India along with the newly recruited staff of project management units at the state level by Administrative Staff College of India, Hyderabad.

On-the-Job Learning

An important means of developing the competencies of service providers is by learning on the job. Characteristics of the workplace environment are crucial for developing competences in health care workers. The work itself, the support and guidance of supervisors, and the appreciation by patients and their families contribute positively to honing job-specific as well as problem-solving skills among health care workers. While challenging tasks tend to slow down job-specific learning, health care workers with challenging tasks tend to learn more general skills (Doving and Elstad, 2003).

Effectiveness of In-Service Training

Factors such as *(a)* not understanding training needs, *(b)* inappropriate selection of trainees, *(c)* attrition of trained employees (due to transfer or opting for higher education), and *(d)* time lag between training and implementation of a programme, among others, have the potential to adversely affect the accrual of competencies through in-service training in the health care delivery system.

Training Needs Assessment (TNA)

Such assessment provides the necessary inputs to make on-the-job training effective in terms of improving knowledge, skills and attitude/motivation. Sometimes, though a TNA was reported to have been conducted, it was not used to design the training programmes (P. H. Rao, 2001: 21); or training institutes were not aware of the needs assessment (IIHMR, 1999).

Selection of Trainees

In a comparative study of executive training, about half of the junior-level executives expressed dissatisfaction with the selection procedure for training on two counts: *(a)* the same person was reported to have been sent for training again and again, and *(b)* the boss decides and nominates the persons to be sent for the training programmes (Rastogi, 2002). Often, state/union territory governments do not receive training programme notifications in time from the central government. Even if the notifications are received in time, these are not communicated down the line to potential trainees by the state/union territory governments. At the last minute, state governments decide to depute those who are dispensable from their work (Yesudian and Mukherjee, 2003: 22).

It is the experience of the author, who regularly conducts training programmes for health professionals, that permission is sought by individuals to leave the programme early, as they have to attend another training programme! It is widely known that influential individuals manage to get nominated to programmes/workshops organized by prestigious institutions. If these are organized abroad, the competition to get nominated is very intense. When a district TB officer was asked why he was attending a programme on RCH conducted by the author, he replied that he had been nominated to do so by the state government that employed him.

Attrition

The benefits of in-service training of service providers, especially doctors and nurses, often do not accrue to the system as a number of them leave either for higher studies, or to take up more lucrative jobs in private health care institutions within the country or abroad. For example, within two years of receiving induction training, about 42 per cent of the medical officers in Andhra Pradesh left PHCs (P. H. Rao, 2001: 21).

Time Lag

In India, this problem is of two types: *(a)* training is imparted but the programme implementation starts at a much later date, rendering the training redundant and ineffective; and *(b)* the programme starts but the training is imparted much later. Health care providers learn on the job by trial and error, often picking up wrong and improper practices. Hence, in order to ensure efficient use of the resources invested in training, just-in-time (JIT) training is appropriate.

Incidentally, Sadana et al. (1998) point out that the time lag between training and programme implementation can be utilized, by the chief medical officers (CMOs) and the State Innovations in Family Planning Services Agency (SIFPSA) in Uttar Pradesh, to provide sub-centers with essential equipment and supplies and an additional room to ensure privacy during patient examination/treatment. The upgraded sub-centers enable ANMs to better apply the knowledge and skills acquired from training and provide quality family planning services to the local population.

Other Issues

While nominating health care providers for training, superior officials sometimes do not ensure that alternative arrangements are made at PHCs.

This means that there is no health care provider available at the health centre, which adversely affects the delivery of care. Making alternative arrangements during the absence of trainees is absolutely necessary.

Competency-Based Training

Support for competency-based training (CBT) is increasing (Sullivan, 1995; Dubois and Rothwell, 2004). CBT is participant-centered and focuses on the mastery of specific knowledge and skills. It is appropriate in training situations where trainees have to attain a small number of specific and job-related competencies (Watson, 1990). Important benefits of CBT include achievement of competencies and building the confidence of participants. Since the trainer is a facilitator of learning and focuses on individual needs, training time is used more efficiently and effectively.

CBT enables the evaluation of each participant's ability to perform essential job skills. Participants receive the list of competencies they have to achieve (Norton, 1987). Since CBT is participant-centered, time can be devoted to accelerate the learning process through the extensive use of models and simulation. The learning environment should be as similar as possible to that of the workplace (ibid.).

For CBT to be effective, it is paramount that the competencies of the trainers be adequate. Hence, training of the trainers (ToT) is critical. Sibley and Buch (1998) recommended that trainees for the ToT programme, for IUD (intra-uterine device) insertion in Gujarat, should have clinical sites with an adequate number of women coming to their clinics for IUD insertion. It is also important to give priority to female physicians, wherever possible, as several studies have confirmed that women prefer them for this family planning service. Training methods also need to be effective and innovative; culture sensitive; appropriate to the subject matter; and based on adult learning principles.

For improving the quality of training programmes, the trainer needs to don various roles *(a)* researcher-cum-needs analyst; *(b)* designer, *(c)* material developer and evaluator; and *(d)* instructor/facilitator (Moore, 1993). Involving immediate supervisors as a part of the block-level training team under the Tamil Nadu Integrated Nutrition Programme (TINP) was found to be the most successful and cost-effective method of training a large number of village-level workers in any development programme (S. S. Rao, 2001:

16). Planned follow-up after training is one way to ensure the transfer of skills, learnt during the training, to the job (Mavalankar, 1996; MODE, 1995).

A review of training programmes under World Bank-financed population, health and nutrition projects in India offers a number of useful suggestions for improving the quality of these programmes. These include preparing and implementing a training policy, creating a training cadre, and devising a systematic measurement of performance (Ramaiah, 1998).

Training Models

A number of training models have been tried. It is necessary to identify a model appropriate for the context. The advantages and disadvantages of various models are discussed below.

Internal vs. External

External programmes normally confer a degree, diploma, certificate or continuing medical education (CME) credits. The advantages include the use of experienced experts and distance education opportunities. The advantages of internal programmes are that they: *(a)* can be customized, *(b)* are less costly, *(c)* are easier to attend (logistically), and *(d)* encourage relationships among colleagues.

Whole-Site vs. Category-Wise

Whole-site training (WST) approach has the advantage of meeting the learning needs of all categories of health care staff in situ and builds sustainable capacity. It involves workers in designing new and more effective training strategies (Bradely et al., 1998). Joint training of *(a)* ANMs and *angan wadi* (crèche/day care centre) workers (AWWs) and *(b)* ANMs and supervisors in Rajasthan was found to result in better interaction, understanding of each other, and better working relations. It also saves time (Prakasamma, 1997). Category-wise training is more relevant when the objective of the training is to build job-specific skills.

Off-Site vs. On-the-Job

Also referred to as site-based or clinic-based training, this method allows the trainee to acquire the necessary knowledge and skills on the job. Such training is advantageous when large numbers of service providers need to be trained or when they are widely dispersed, making group-based training very

expensive (Sullivan and Smith, 1996). On-the-job training is excellent for skill building, while off-site training provides a different environment free from interruptions due to routine work.

Cascade vs. Centralized

Under the cascade training model, a set of key trainers is trained at different levels. The key trainers, in turn, train either health functionaries directly or lower-level trainers. This system has the advantage of building the capacity of the training system as a whole. The cascade model of training is popular. A three-level cascade model—state level academy of nursing studies > district training team (DTT) > multi-purpose health assistant (MPHA) at the PHC level—was used in the Andhra Pradesh Social Marketing Project to train self-help group members in temporary methods (Rao and Murthy, 2002). The Enhancing Training Competence of Trainers (ETCT) programme in Rajasthan developed a team of more than 100 trainers at training institutes at the state, regional and district levels to carry out further training in the cascade model (Chandra and Sharma, 1998). However, the Ministry of Health and Family Welfare observed that this model may not be very effective due to transmission loss from one level to another (MHFW, Govt. of India, 1996).

Local Flavor and Convergence

Familiarity of trainers with the local situation, informal atmosphere of the villages, involvement of voluntary organizations (which facilitates convergence of the expertise and skills of government and non-governmental sectors) led to a more effective training exercise at the grass-roots level in Karnataka. The methodology was also found to be participatory and less time-consuming (Sekher, 2003).

Continuing Medical Education (CME)

It is defined as "any and all the ways by which doctors learn after formal completion of their training (Goudar and Kotur, 2003: 27)." Though the Indian Medical Association (IMA) recognizes that doctors need CME to keep them up to date with the latest practices, there have been delays in enacting legislation to make it compulsory. "There is resistance to change by [health] professionals who lack the opportunity for undergoing good quality CME, and lack [the] incentives as well as motivation for attending CME programmes," says Dr. P. T. Jayawickramarajah, Coordinator at the WHO's Regional Office for South-East Asia, New Delhi (Sarkar and Kumar, 2004).

The Medical Council of India (MCI) has been campaigning to make CME compulsory. In its code of ethics (MCI, 2002), the council states that members should complete 30 hours of CME every five years in order to re-register as doctors. Progress has been slow due to the lack of opportunities. Since it is not legally binding, being voluntary in nature, only about 20 per cent of India's doctors undergo CME (Sarkar and Kumar, 2004: 155). Traditional CME programmes were criticized for failing to achieve their stated objectives. They are largely one-time didactic exercises, where an endless line of speakers make a series of presentations to a passive audience (Goudar and Kotur, 2003).

Distance Education

Distance education has the potential to train a large number of health care workers in a short time span in a cost-effective way; it enables the upgradation of health care skills without diluting quality. Distance education is more appropriate for in-service training of health personnel. It allows self-pacing for convenience and also facilitates learners' control over their learning (Dutta, Jena and Panda, 1996).

Health administrators have reposed faith in the efficacy of distance learning for in-service and refresher training (Varghese, Pulimood and Senguttavan, 1993). The advent of information and communication technologies (ICT) and the Internet make distance education interesting and cost-effective.

Well-developed mentoring programmes for students can contribute significantly to learning outcomes and produce better-equipped health care workers. A study (Srivastava, 2002) of students enrolled for IGNOU's distance education programmes—(BSc Nursing) and Post-Graduate Diploma in Maternal and Child Health (PGDMCH)—that use mentoring revealed that the pass percentage was fairly high (above 45 per cent) in both the programmes. Mentoring helped these learners to navigate their way through the programme by using multiple tasks and activities. BITS-Pilani's distance education programmes for health professionals have an added feature of 'contact programmes' at selected sites and specific dates, providing trainees access to experts.

Re-certification/Re-licensing

A competent trainer or service provider does not remain competent forever. A system of re-licensing and/or re-certification for a specified period will

ensure that health care professionals update themselves with the latest developments in the field, are equipped with the necessary knowledge and skills, and remain competent in a fast-changing scenario. An e-poll reported that 86 per cent of its respondents opined that the re-certification of doctors should be made compulsory after every five years (DoctorNDTV, 2004).

New guidelines of the Association of Physicians of India (API), in pursuance of the directives of MCI, make it mandatory for doctors to have at least 150 credit hours of academic activity for five consecutive years. This is likely to pave way for the re-certification of doctors from time to time (*Tribune*, 2003). The Planning Commission (2001) urged the Tenth Five Year Plan (2002–07) Working Group: "to suggest mechanism(s) for periodically updating [the] knowledge and skills of medical and dental practitioners/para-professionals (both public and private) [for] improving [the] quality of care provided, such as CME programmes/re-certification."

Enabling Conditions

Competent providers require enabling conditions to apply their knowledge and skills on the job, and thereby improve the quality of care. This will, in turn, enhance the satisfaction levels of service providers as well as users, and achieve health and demographic objectives. Important enabling conditions include: *(a)* support from colleagues and superiors, *(b)* adequate supplies and structural inputs, and *(c)* supportive supervision.

Support from Colleagues and Superiors

Barriers to applying knowledge and skills on the job include: *(a)* untrained and non-cooperative/supportive co-workers and *(b)* lack of infrastructure and equipment (IIHMR, 1999). Yesudian and Mukherjee (2003: 29) observed that trainees do not get adequate encouragement from their superiors, as the latter do not appreciate the value of training. This can create frustration among the trainees.

Supplies and Structural Inputs

Infrastructure and supplies are equally important enabling conditions. Structural inputs that supplemented training enabled service providers to perform better, with less difficulty, and increased the satisfaction levels of the client as well as the service provider (Ramana et al., 1997). Though training helped nurses working in the PHCs of Andhra Pradesh to improve

their knowledge and skills, they could not implement what they had learned due to practical difficulties and infrastructure deficiencies (Ratnam, 2001).

Supportive Supervision

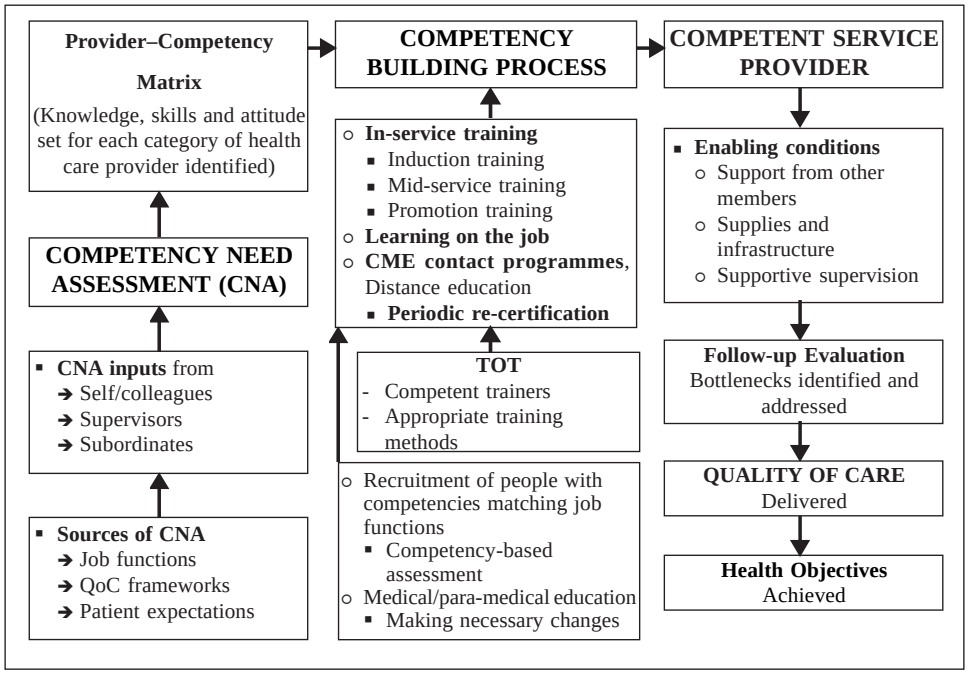
Supervision and support visits from nearby local medical colleges to PHCs and immunization sites in Andhra Pradesh complimented training to improve the quality of care on several fronts: more effective planning of sessions, better cold chain management, safer handling and disposal of sharps (medical waste), and improved tracking of dropouts (PATH, 2004).

Comprehensive Framework

In conclusion, the present paper has put together a comprehensive framework for building the competencies of the health care providers to improve the quality of care, with a focus on primary care. Such a framework is very relevant as the quality imperative is now well recognized in India, even by the government-run health care system.

The building block of the competency-building framework is competency need assessment (CNA), as shown in Figure 1. It involves identifying

Fig. 1: **Competency-Building Framework for Quality of Care**



competencies—in terms of knowledge, skills and attitudes—with respect to each of the functionaries at the PHC level. Experience, perceptions and viewpoints of self/colleagues, immediate supervisors and subordinates provide valuable insights to carry out the CNA. Job functions, QoC frameworks and patients expectations are other useful sources for conducting a CNA. The output of a CNA is a provider-competency matrix, which provides vital inputs to the competency building process.

An effective competency-building process must begin with reform of the education system for medical as well as para-medical personnel. The recruitment process should involve competency assessment and not be exclusively based on academic achievements. Once a person enters the job, there are a number of opportunities for enhancing the existing competencies. Key elements in this process are design of the training curriculum based on a CNA and adoption of appropriate training methods. The trainer's competencies determine the efficacy of the training conducted; hence, ToT is a must. A competent service provider equipped with new knowledge, upgraded skills and a favourable attitude is the expected output of the competency-building process.

Equally important are enabling conditions that encourage the health care provider to apply the newly acquired competencies on the job. Hence, a follow-up evaluation of training and other competency-building activities needs to be carried out. This will help identify the factors facilitating the transfer of knowledge and skills to the job, as also the bottlenecks that prevent such transfer so as to adequately address them.

Improving the quality of care at the PHC level ensures that conditions treatable at this level are not passed on to a higher-level institution, putting more pressure on the latter. It also helps to improve the satisfaction levels of the users and the health care providers. This ultimately paves way for achieving the health and demographic goals of the nation.

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