

## Teaching the fundamentals of primary care: a point of view.

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In the United States today major forces in society and within medicine are coming together to support an increase in the number of primary care physicians and an enlargement of the place of primary care in medical practice. The drive toward universal health insurance coverage and efforts at cost containment are playing an important part in fueling the movement toward primary care (Nutter et al. 1991; Budetti 1993). A shortage of physicians in rural and other underserved areas is also an impetus to the production of more primary care physicians (Young 1990; Riley et al. 1991; Roberts, Davis, and Wells 1991; Jecker and Berg 1992; McElmurray et al. 1992; Roberts et al. 1993). Medical schools and medical educators are rethinking the traditional curriculum and training of physicians (Kar 1990; Finberg et al. 1991; Stimmel 1992; Bryant and Morgan 1993).

Observing at the present moment, one might conclude that contemporary economic and political forces had selected primary care over specialty medicine as the solution to some of the problems of access and economics that now afflict American medicine. A historical perspective not only clarifies what primary care is and provides further understanding of its rise to prominence, but it also points up dangers that primary care training programs must overcome. Educational programs for primary care physicians have three goals: First, they must prepare physicians for the care of patients in the twenty-first century. To accomplish this they must develop the new knowledge base for this training. Finally, they must develop teaching methods that will overcome the obstacles against which previous attempts have foundered.

In Great Britain, in 1920, not long after national health insurance was instituted, primary care (the primary health center) was distinguished from the secondary consultative center and the teaching hospitals. The idea that primary care is the most general, entry-level medical care and that it is to be contrasted with referral centers that contain specialist care and with teaching hospitals has become widespread in the world. Primary care has been a central mode of medical care in many nations for a long time, providing an international body of varied experience (Bufford 1992; Blumenthal 1992; Whitcomb and Desgroseilliers 1992). The concept was further developed by the World Health Organization's search for health care systems that could advance the social goal of member governments for "the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life." The World Health Assembly, in subsequent deliberations, defined primary health care as follows:

Essential health care based on practical, scientifically sound, and socially acceptable methods and technologies made universally accessible to individuals and families in the community by means acceptable to them and at a cost that the community and the country can afford to maintain at every stage of their development in a spirit of self-reliance and self-determination. It forms an integral part of both the

country's health system of which it is the central function and the main focus of the overall social and economic development of the community. It is the first level of contact of individuals, the family and the community with the national health system, bringing health care as close as possible to where people live and work and constitutes the first element of a continuing health care process. (World Health Organization 1978)

At first glance it seems to be describing a kind of medicine that is ideal for dealing with the most common problems in the poorly defined fashion that they often show themselves. As Barbara Starfield points out, "It addresses the most common problems in the community by providing preventive, curative, and rehabilitative services to maximize health and well-being. It integrates care when more than one health problem exists, and deals with the context in which illness exists and influences people's responses to their health problems" (Starfield 1992, 4). Similar concepts mark a statement on the generalist physician by the American Boards of Family Practice and Internal Medicine (Kimball and Young 1994). When the implications of these definitions are elaborated, primary care takes on a complexity that is a far cry from the purpose delineated for it by the British National Health Service.

Two other movements in medicine and widespread social changes of the last generation further define what is asked of primary care. The family practice movement gained force in the 1960s. Decrying specialty medicine's concentration on the disease rather than the patient, it sought to focus the doctor on the patient in a special way. In G. Gayle Stephen's words:

Family physicians know their patients, know their patients' families, know their practices, and know themselves. Their role in the health care process permits them to know these things in a special way denied to all those who do not fulfill this role. The true foundation of family medicine lies in the formalization and transmission of this knowledge. (Stephens 1982, 8)

Increasingly apparent in the 1970s, the hospice movement became another force toward care of a patient as a sick person within a family and community matrix. It is the sine qua non of palliative care that disease-oriented medicine has failed to cure the patient or meet the needs of patient and family. Palliative care is often associated with symptom control, but hospice physicians know that symptom control cannot be adequate in the absence of a much broader understanding of dying patients – suffering is an affliction of persons, not bodies, and can occur in relation to any aspect of a person: physical, psychological, social, or spiritual (Cassell 1982).

The family practice and palliative care movements were born during a period in the United States marked by a great expansion of our understanding of the concept of person. The civil rights and women's movement, the embrace of difference and diversity leading to the disappearance of the melting-pot metaphor, and the rise of bioethics, all celebrated the emergence of an enriched concept of person. For medicine, this translated into care not merely of an individual or a bearer of rights, but of "me, [as in] Doctor – treat me, not just my lungs or liver!"

The family practice movement grew rapidly in the early years after its official designation as a specialty in 1970, but then faltered. Palliative care continues to struggle to gain acceptance within mainstream medicine. And, as

we all know, the idealism that pervaded medicine after World War II and into the mid-1970s has been overwhelmed by the dominance of economic forces and conservatism throughout the society.

It is of little surprise, then, that in a time when economics speaks so loudly, primary care has come by many to be seen basically as a kind of medicine with economic, social, and administrative advantages, although little regard has been accorded it as medicine *qua* medicine. It is inexpensive compared to high-technology specialist care, it can be provided in a physically accessible way and fit into the social structure of the patient population it serves, and it is administratively uncomplicated because it can be delivered in community settings. Some other common defining characteristics that have been discussed are that primary care physicians are first-contact doctors: they may act as gatekeepers-aiding in the more rational use of resources; they are not specialists or are not functioning as specialists. It is a common and destructive error to believe that these obvious organizational advantages mean that the medicine itself is simple.

The shift to primary care is viewed by some medical professionals (including myself) as a sea change from which a richer and finer medicine will emerge and by others as degradation of current scientific and technological subspecialty medicine. In light of the attention given to the subject, and its importance, what has been written about the changes is disappointing because it is incomplete. The literature clearly reveals that primary care physicians, generalists, will no longer focus on a patient's physical disorders but will be aware of psychosocial factors in health and disease and of the patient's place in the community as well as their own. They will be responsive not only to the varied needs of individual patients, but also to the other demands of the health care scene, from the economic to the environmental. They will understand the importance of preventive medicine and of helping their patients and communities to lead healthy lives. What remains unclear is how this new generation of primary care physicians will accomplish these tasks, what new kinds of knowledge they will require, who will teach them, and how actual day-to-day doctoring will look. One might object that the family practice literature now, and for years, has, for example, emphasized the doctor-patient relationship, concentrating on the whole patient, teaching communication skills, seeing the patient within the context of family and community, and changing to a biopsychosocial model of illness (McWhinney 1989; Rudebeck 1991). No one questions the soundness of these ideas; the problem is that, after a full generation of prominence, they simply have not thrived within a disease-oriented, technology-driven medicine, in much the same way as, for two generations, we have asked doctors to focus on the patient as a person, yet, more often than not, the patient's human concerns are still swept away by the technological imperative.

The failed medical care programs of the 1960s are strong reminders of the danger of imposing expectations on both physicians and the public that medical generalists will be ill trained to meet. Virtually all the descriptive ideas and terms currently used to envision the advantages of primary care -- for example, "continuing," "coordinating," and "comprehensive" -- characterized the medical programs funded as part of President Lyndon Johnson's war on poverty. Naturally enough, as the money dried up, the programs and the medical care institutions that were part of them disappeared. The ideas, unfortunately, also got tucked away, suffering from malnourishment. They did not catch on or become institutionalized; rather, they were blown away by the flowering of speciality medicine and the burgeoning of technology. During the same period, many medical schools had introduced social and behavioral science programs that also generally failed to translate their teaching into medical skills, and so they too disappeared.

I suggest that we start with a supposal. Suppose it is the case that the fundamental idea of primary care -- make the sick or well person the subject and object of medical care -- has been heard widely enough. Here, the word "person" is used in its widest sense-the referent of the statement, "I am a person." No persons exist apart from their past experiences or beliefs, their families, their family history and beliefs, their relationships with others and with their bodies, their culture and society and their roles therein, and their daily behaviors. Every person is a political being. Everyone has a secret life and a believed-in future. And, finally, every person has a spiritual dimension. Assume also that doctors are aware that these aspects of persons have an impact on the onset, presentation, diagnosis, treatment, course, and outcome of illness. Suppose, then, that the problem is not a failure of the dissemination of the idea of the central importance of the person in primary care, but, rather, is the

reality that physicians, generally and for the most part, still do not have the cognitive tools to bring the person into the center of medical practice. On the basis of the supposal, examining the reasons for the physician's difficulty is essential. That accomplished, it is possible to search for new solutions with hope for their success.

An invisible barrier exists, I believe, thwarting the best intentions of physicians and their teachers to put into practice the foundational ideas of primary care. This barrier is the conflict between the kind of knowledge which physicians know disease – the science of medicine – and the kind of knowledge by which they know and act on their patients as the particular individuals they are. The conflict is manifest within the world of medicine, where the scientific ideal of knowledge-as objective and measurable -- disparages the largely subjective, nonmeasurable knowledge of patients. This barrier to many of the patient goals of primary care is also within physicians themselves because different, even contradictory, kinds of thought are required of them when they think about the science of medicine than when they consider the individual patient.

The conflict between knowledge of the patient and knowledge of the disease has existed from the beginnings of medicine. From the time of Hippocrates, the history of medicine has been marked by a struggle between two major ideas: rationalism and empiricism (Courter 1973). Rationalism focuses on theories of diseases, their origins in nature and biological mechanisms, and on science. It bases the actions of physicians on these theories. Empiricism is concerned with patients: what it is about them and their interaction with their environment and with nature (in the form of the mechanisms of disease) that produces this illness at this time. Empiricism focuses the actions of physicians on patients themselves rather than primarily on their diseases. Not surprisingly, we live in a predominately rationalist era. The conflict is now complicated and worsened by rampant technology.

The same conflict has been seen as the difference between reductionist and nonreductionist views of nature, or between reductionist and holistic science. It is the underlying theme in the struggle between the science of medicine and the art of medicine. How the conflict is pictured matters because the understanding must be translated into teaching programs that directly address the difficulty students are having in thinking about their patients in contradictory fashions and that permit them to be comfortable with two different kinds of knowledge.

Science is, by nature, rationalist. Scientists progressively abstract from the objective world of perceptual, sensual reality until their concepts successfully capture the universal nature of the process under study. Whereas the real world of patients may be the ultimate touchstone that tests the correctness of the concept, good science is necessarily ever further from the everyday world. The best molecular biology exemplifies good science. Finding a gene for a disease suggests that, if the gene is present, the patient should have the disease. Sometimes yes and sometimes no. The degree to which the disease will be expressed, if at all, in the presence of the genetic determinant depends on a host of factors within the patient and the environment. This indeterminacy does not invalidate genetic theory. The theory is not about patients in general or a particular patient. It is about genes and how they are translated into the proteins that make things happen in nature. Applying the knowledge of disease that follows from the theory is the clinician's job.

Knowledge of a particular patient is necessarily the exact opposite of scientific knowledge. The more immediately the perceptual and institutional information flows from the patient, the truer is the knowledge of that patient. Any abstraction produces an inaccurate picture. Premature judgments, preconceptions, biases, and stereotypes are misleading abstractions. Complete knowledge of the person is impossible -- the person, as it is said, is ineffable. The only instrument that can come close to knowing a person is another person: in our instance, a physician. The physician comes to know the patient through listening to what is said and unsaid, seeing what is manifest and not manifest in the patient's ongoing presentation to the world, feeling with the examining hands what the body has to tell, and finally, being aware of feeling and emotion. This ongoing process (it is not a static event) produces information that, like all information, is true -- it approximates reality -- within levels of probability. Consequently, it is the physician's job to constantly assess how good the information is.

Most of the information acquired is subjective; it cannot be otherwise. It is only through understanding the subjective nature of it that one can best gather the information, value it, and use it. The subjective is made objective by being actively thought about -- it becomes an object of thought. To be shared or described it must be



converted into language. This step has pitfalls because it is in the nature of language to create abstractions. Appealing as it so often is, however, to stay within the subjective arena, where, for example, it is enough to present "my feeling about this patient. . . .," that will not do, at least with physicians in training. The subjective must be rendered objective in order to weigh it with and against the objective, "hard" data generated by tests, images, and other clinical measurements. For the physician to be the instrument of knowledge of the patient requires training in systematic and disciplined subjectivity. You will appreciate the difficulty of the educational task of teaching this kind of subjectivity when you reflect that most physicians have been taught since grammar school that the ideal kind of knowledge is scientific and objective. Further, all around them in medicine, that which is objective -- in the sense of measurable -- is valued and those things that are subjective are disvalued. The problem is simplified by realizing that we don't want doctors to write Tolstoy's *The Death of Ivan Illych*. We want them to treat this patient at this time in this context according to the best interests of the patient as the patient and the doctor know those interests, within the constraints of fate and circumstances, while employing the most appropriate medical science and technology.

This is what we have asked the art of medicine to do in generations past. Even with the best intentions, the largely untutored learning of the ill-defined aspects of the art of medicine is no longer a match for how medical science and technology are learned and taken to heart. Education in regard to medical science and technology has far outpaced that of the art. The training of primary care physicians must recognize a distinction between doctoring itself and the medical science on which it is based. If primary care physicians are to fulfill their anticipated role, teaching the techniques and knowledge base of doctoring -- how to take care of patients -- should be as explicit as the teaching of medical science. A true and sustained shift toward the training of primary care physicians, therefore, will rely on distinct changes in graduate and postgraduate education.

In what follows, I am addressing the problem of training subjectivity to an extent that it can meet objectivity on level ground. Some may be disturbed by my apparently single-minded concentration on the individual doctor and patient and on their relationship. I believe one cannot know any particular patient except through the relationship with that patient: not any relationship, but the doctor-patient relationship (Cassell 1991, ch. 5). This does not deny the importance of culture, society, or family to the individual patient and illness, constituting, as they may, the social fabric of the patient, but their influence arises because the person instantiates them through the concepts, language, knowledge, and beliefs that direct behavior. Doctors acknowledge the impact of the social makeup of the patient on health or illness by facilitating the flow of information they receive from the patient based on respect for persons and unfiltered through preconceptions or prejudice.

When physicians are in the presence of the patient, connected through the relationship so that they can know the patient in the way I have described, they bring to the experience their knowledge of the social and personal dimensions of the human condition, which helps direct and interpret the interaction. In order to understand the individual, doctors must know about the wider cultural and social milieu in which their patients live. If a doctor does not know that corporations are currently downsizing, she will have difficulty understanding the concerns of an apparently successful middle manager. Similarly, not to know about the Hasidic family structure is to misunderstand the dynamics of the Hasidic couple in front of him. Caution is required so that physicians do not use this knowledge to create abstractions that would interfere with their direct knowledge of the patient. Acting only on knowledge of families in general can be as error producing as acting only on knowledge of pneumonias in general. How knowledge of all the aspects of personhood is employed will vary, of course, with the clinical problem: for example, the care of the dying or the encouragement of a healthier family lifestyle.

The newer focus of primary care physicians will be the enhancement, preservation, or restoration of physical, psychological, and social functioning within the context of community. The relief of suffering stands alongside the preservation of life. Adopting this focus cannot be accomplished merely by reorienting the training of doctors or making them aware of patients' needs. The patient, as a sick or well person, is in many ways a new object of interest. Because of this, doctors require methods of understanding, observation, thought, and judgment that allow them, in the naturalist fashion, to really see patients as "person-things," apart from the mechanisms of disease. (We are not speaking of disease, and also the patient, in the fashion of the dominant understanding of

this century, but of the patient first and the disease and pathophysiology through the patient.)

Curricular change in American medical education is a slow process, subject to powerful internal and external political and economic forces (Sheets, Anderson, and Alguire 1992). For this reason, I am discussing postgraduate training, rather than the teaching of medical students. I do not mean to rule out this content in medical school. Generalist programs, on the other hand, control their own teaching, but they usually do not have sufficient power to change their school's curriculum. Primary care is not a unitary field. Family practitioners, general internists, and general pediatricians have different perspectives. I have been a practicing general internist for more than three decades, and this has shaped my belief that the primary interest of general internists is sick adults. Family practitioners have a wider range of clinical skills, but I expect that they are less concerned with the very seriously ill. General pediatricians are, by definition, interested in children and adolescents. Despite their differences, these disciplines share a fundamental concern with persons, sick or well. This essay is about what is common to these different approaches to primary care. It might be argued that specialists should also care more about their patients than their diseases. Perhaps so, but appropriate changes in their training are not under the control of generalists, and will more likely come about after than before primary care has demonstrated success in training and clinical performance.

Much of the suggested change in education has revolved around the place of training. It seems clear that the traditional method of training physicians primarily on the wards of teaching hospitals is inadequate. It is considered essential by many that primary care training should take place in an ambulatory setting like an outpatient clinic, physician's office, or the community (Perkoff 1986; Lane 1988; Wooliscroft and Shwenk 1989; Branch 1990; Smilkstein 1990; Philbrick et al. 1990; Verby et al. 1991; Yonke and Foley 1991; Skochelak and Jackson 1992; Rees and Wass 1993; Richards and Henry 1993). Unquestionably, the problems presented by patients outside of the hospital are different than for inpatients, and different skills are necessary for their care. Furthermore, many patients who previously required a hospital for their care or surgery are now commonly treated outside the hospital. There can be no change in the direction of medicine without a concurrent change in the training of doctors so that their education matches them to their actual tasks in the care of patients, but this goes far beyond merely shifting their place of training (Murray, Wartman, and Swanson 1992). Changing the place of training also changes the kind of problems physicians face. In an outpatient setting they will gain experience in the everyday issues that face primary care doctors. A number of authors in the primary care literature point out that epidemiology teaches us that patients frequently come to doctors with symptoms, not disease. This is a reason to change the emphasis from recognizing the disease to understanding and ferreting out the biopsychosocial process that led to the symptom. All symptoms have a cause, a pathophysiology, and a meaning. It is not a reason to avoid training in serious diseases, even if they are rare. It would, for example, be an egregious, and probably fatal, error for a doctor to miss treating early meningococcemia because it is uncommon. On the other hand, musculoskeletal disorders are very common and, except for the osteopathic schools, their recognition and treatment are generally inadequately taught to undergraduates or residents. The underlying problem correctly addressed by the stress on epidemiology is the still too common belief that diseases are more real than the patients who have them (Cassell 1991, ch. 7).

The goals of postgraduate training of generalists cannot be adequately met by clinical training alone, no matter what the setting. Systematic instruction in classrooms or seminars is necessary to solve the problem of the conflict and lack of balance between trained objectivity and trained subjectivity discussed above. I am well aware that this idea is both outre and repugnant to most medical educators, but I believe we must reexamine this question carefully. The present method of training was developed in Sir William Osler's era, when Osler's objective (see his textbook) was to teach about the actual presentation of disease, its variability among patients, and the impact of this reality on diagnosis. The newly developed clinical laboratories were just off the wards of the Johns Hopkins Hospitals, and they demonstrated the direct applicability of science to clinical medicine. Most doctors ultimately did either medicine or surgery (or both), and their teachers did the thing they taught -- they were practicing physicians. The lesson of Johns Hopkins was then introduced into practice. Osler's basic message is now taken for granted, but it is forgotten that his teaching method was in the service of an idea. The new focus of primary care is a new idea for medicine, and the necessary skills of doctoring are now much more

advanced than they were, so that new methods of teaching must be developed to meet the idea. Thus, as the subspecialist goes off to the laboratory to learn science, so the generalist must return to the classroom to learn the basic skills of doctoring. Ophthalmologists have been taught in classrooms for years because they must learn the basic sciences of the eye that are not taught in medical school. Orthopedists are increasingly being taught the use of new technologies in this fashion. Physicians going into public health return to the classroom, as do modern physician-administrators.

There is a further problem to be solved. We like to believe that doctors gather evidence and reason from the facts and their knowledge of medical science to arrive at a decision that is best for a particular patient. To the contrary. The modes of thought in which physicians are trained and that govern much of their behavior are based on virtually automatic skills and rules that are preprogrammed and learned early in their training (Leape 1994). These skills and rules concern disease and technology, not persons. Doctors have not been trained to acquire similar rules and skills about persons. Until they are, their best intentions for a sick person may be overridden by an ingrained automatic rule.

Postgraduate instruction must teach doctors to be their own instrument, retaining such confidence in the discipline of their subjectivity that they allow it to compete with possibly conflicting images on films or the numbers on a printout or the siren call of a sweet technology. New rules and skills must be acquired that are related to persons. Hands-on postgraduate training is no longer adequate to these tasks. I have been practicing medicine for decades, and I have been writing about and studying this problem for 20 years. I still have difficulty integrating objective data, moral imperatives, aesthetic information, the value-laden, and the affective. I do not think the difficulty is unique to me. It is not merely principles or attitudes that must be taught, but difficult skills.

#### Knowledge Bases

The fundamental knowledge base for primary care remains the traditional preclinical science of medicine. It is the foundation from which modern Western medicine derives its legitimacy. It is the basic source of knowledge about nature as it is expressed in the body in health and disease. All surgical and medical interventions in the pathophysiology and pathoanatomy of disease are founded on it. It is about what Carl Rudebeck (1991) calls the body-as-nature. We must hope that when we get our recent graduates they know it well. Knowledge of social science would also be helpful, but too often this is not the case. It would make easier our task of teaching, again after Rudebeck, about the body-as-self.

Primary care doctors, as part of their mandatory training, must be taught the behavior of sick and well persons, advanced communication skills, the acquisition of information from disparate sources and its use in judgment and decision making, and about human function and disability. They must also master technology through explicit training and learn modern therapeutics as well. A thorough grounding in preventive medicine is necessary. These educational developments will provide opportunities for exciting curricular innovation.

#### Knowledge of Persons

If the person (sick or well) is the subject and object of medicine, then knowledge of persons takes its place alongside science as a fundamental knowledge base. Until very recently knowledge of persons was considered behavioral science, and attempts to introduce it into the medical curriculum generally failed. Entering medical students now commonly have had no training in psychology. Departments of psychiatry have not infrequently shifted emphasis away from psychodynamically based therapies and toward brain pathophysiology and psychopharmacology. As a consequence, it is not uncommon to find graduating medical students who have had no training in normal or abnormal psychology, no experience with nondrug treatment of emotional illness, and no instruction in the psychology of physical illness.

The social sciences are essential to teaching knowledge of persons. They have entered the teaching process in different ways in various programs. I believe social scientists make their best contribution when they bring their insights to bear during the discussion of particular patients -- "bedside" teaching -- rather than in the classroom.



In the same manner, clinical ethicists have discovered how much they have to contribute to the clinical discussion of cases (Zaner 1993).

Development of a core curriculum for knowledge of persons -- the subject matter and how best to teach it -- remains to be accomplished, although bits and pieces are to be found in medical colleges and centers all over the United States. Knowledge of persons includes an understanding of families and of the relationships of persons within them. Knowledge of persons also includes knowledge of communities and how persons and their families relate to the community. Writing about these subjects as I do here, I am aware, has a seemingly naive quality. I know that family practice has emphasized the centrality of the family in medical care, and its literature on this subject is large. Medical care delivered to individuals through the office of the community has also received considerable attention, more extensively outside the United States. By writing in this fashion, I mean to suggest that making the person the subject and object of medicine, and training the subjectivity of physicians in a systematic fashion, changes the relations among doctors, persons, families, and communities. Previous knowledge is not thereby invalidated, but requires rethinking, much as the increasing availability of very early diagnostic tests for cancer requires reorienting previous knowledge of cancer.

In the absence of general agreement about what "knowledge of persons" is, providing primary care doctors with effective communication skills, trained observational skills, and the ability to describe (narrate) in speech and writing what they know of patients gives them a basis for learning from their experience (Hunter 1991). The virtually unmediated appreciation of a patient is difficult and counterintuitive to the traditionally trained physician. Here, I believe the classroom is essential.

#### Knowledge of Function and Process

The change of goals I have described requires a shift in understanding of the nature of illness to one where the continuum of function figures more heavily than isolated disease states. Certain groups of patients exemplify specific problems, a concept that teaching imparts. The chronically ill, the elderly, and the disabled are such populations.

#### Chronic Illness

The training of primary care physicians must acknowledge that chronic disease is a far greater cause of death than acute disease, that most patients have chronic disease, that the problems of chronic disease are different from those of acute disease, and that the acute diseases are a false model for chronic disease. In short, primary care must reorient itself toward chronic disease. Chronic illness and chronic disease are distinct from one another. Patients may have chronic diseases like hypertension or diabetes without being ill. Chronic illness may be present where there are no recognized disease states -- for example, chronic pain syndrome, post-polio syndrome, obesity, or long-standing congenital malformations. Scientific understanding of disease is often inadequate to explain either suffering in chronic illness or the manifestations of the illnesses themselves. Symptoms, the patients' reactions to their illness, and even the actions of physicians all become part of illness as it unfolds over time. Further, for the most part doctors do not treat chronic illness; they teach patients to care for themselves.

#### The Elderly

The growing size of the population of elderly makes it impractical to have medical care delivered only by geriatricians. Yet treatment suffers when traditional disease models are employed to evaluate the problems that accompany advancing age. Older patients frequently have several distinct diseases and physical findings that would be a cause for alarm in younger patients -- cardiac murmurs, for example. If each disease is vigorously pursued either diagnostically or therapeutically, disaster may ensue. In like manner, if the various diseases are divided among subspecialists without the rare happening of careful coordination, problems with medication, for one, commonly arise. Diseases like osteoarthritis, commonly brushed aside with remarks like "What do you expect at your age?" are a major source of disability. These can often be successfully managed, keeping an old



person active and functional. Primary care physicians must be trained in the care of the aged.

### Disability

The evaluation of impairment and the promotion of improved functional status and return to work exemplify an important category of knowledge and skills for training primary care physicians. Persons with disabilities have achieved special status in the society that elevates their medical problems from peripheral to central importance. In both the aged and the disabled, thinking in terms of function rather than disease states is crucial to successful doctoring. Also necessary in the care of both groups is a knowledge of musculoskeletal disease and dysfunction. Rehabilitation has been one of the major advances in American medicine since World War II, yet it remains peripheral in the educational process. To understand disability, physicians must look beyond the abilities of the individual to the functional demands of the workplace and the community. The world of work is an essential aspect of the lives of all people. Its importance in the life of a patient demands a knowledge not only of a patient's function, but also of what can be done to help patients perform the social roles of their age group, and what modifications in the society, the home, and the workplace might be required for their performance. Measuring functional ability is a learnable skill for which criteria are in various stages of development.

### Technology and Diagnostics

The proper diagnostic and therapeutic utilization of technology should become a subject of systematic instruction for primary care physicians. Its content should be taught apart from, as well as within, the patient care setting. Why is this necessary when patients must ultimately be referred to specialists skilled in the use of the technologies? Technologies are not things apart from the purposes of those who direct their use or employ them. When the goals of care change, as described here, then deployment of the technology must change; this will occur under the direction of the referring primary care doctor. Next, the impact on a patient of a particular technology will depend in part on how the technology is explained initially to the patient, requested from the specialist, and its results then interpreted to the patient. This requires knowledge on the part of the referring doctor. Finally, the current problem of a rampant technology demands physicians specifically trained in its restraint (Cassell 1993).

The trainee is being taught "diagnostics" -- how diagnostic goals are set and how technology is employed to meet these intentions. Technology admits of general principles that can be taught by the specialists in each technological field. In addition, clinical epidemiology has developed rational methods for deciding when a specific diagnostic technique will add useful information or increase diagnostic accuracy (Fletcher, Fletcher, and Wagner 1988; Sackett et al. 1991). General internists must know how and when and (when not) to use each and all diagnostic technology, even when that technology falls within the purview of another specialty. Their knowledge should be sufficiently generalizable so that they can master new technology as it arises. Diagnostic imaging and endoscopy are examples of effective, widely used diagnostic technologies. It makes little sense to expect primary care physicians to learn the complexities of imaging through experience alone; the diagnostic and economic stakes are too high. Radiologists do not make up things as they go along; however, they work with basic concepts, scientific evidence, and empirically demonstrable facts, all of which can be taught. Primary care doctors should be able to read sonograms, chest X rays, echocardiograms, abdominal computer tomography, and back and joint images with considerable confidence. This is not because of lack of faith in their imaging colleagues, but because all of these images have brought anatomy and anatomical truth back into medicine, and primary care doctors should once again know anatomy if they are to understand their patients' problems. Many other technologies, like endoscopy, EKGs, pulmonary function tests, cardiac procedures (treadmill exercise tests, echocardiograms, thallium scans, and angiograms), even automated blood chemistry testing, and others yet to be developed must be understood by primary care physicians if they are to be masters, not slaves, to their technologies.

### Therapeutics

At present, therapeutics -- the use of pharmacological, biological, or other agents in the treatment of sick persons

-- rests on the pharmacology taught in the second year of medical school. Modern therapeutics have advanced far beyond the stage that a second-year medical student can comprehend. Further, decisions about their deployment are too complex to be taught only by precept or in conferences during postgraduate training. These complex therapeutics and pharmacodynamics have been thought to be the province of the subspecialist, but if primary care physicians are to carry out the role envisioned for them, they must understand the theory behind their use and be prepared for the new agents to come. The effect of inadequate training is evident not only in the use of new drugs or treatments but even in classes of agents that have been around for years: for example, antibiotics and analgesics. Here is an area where we do not lack for teachers -- the clinical pharmacologists have been waiting for our call.

#### The Health Care Team

Primary care physicians require the assistance of many other health care professionals, but overdependence on other professionals can make for inadequate physicians. For example, reliance on social workers to handle the psychosocial aspects of illness can lead physicians to avoid learning first hand how to deal with patients. The combination of leadership skills and respect for others will require extensive training.

#### Preventive Medicine

Preventive medicine has become increasingly important in discussions of primary care (Lane 1992; Greenlick 1992; Albright et al. 1992). The field of public health has long used the concept in relation to preventing disease in individuals (e.g., immunization) and populations (sanitation and other environmental controls) or in preventing illness in persons already diseased (e.g., treating a tuberculin-positive person with antibiotics).

The modern sense of preventive medicine is broader and finds its intellectual basis in the understanding that virtually all illness is a process arising from progressive alterations in biological function that are influenced by the nature of the sick person and the context -- environmental and social forces that affect the person. It follows from this that the effect on individuals of the biological processes of disease can be altered -- illness can be reduced or prevented -- by changing the behavior of the person and/or by acting on that person's life context. Thus, for example, changing the American diet and promoting healthier lifestyles take their place alongside smoking cessation and daily aspirin intake in reducing the prevalence of coronary artery disease and the incidence of coronary events. As another example, changing the home or work environment can have salutary effects on diseases as disparate as asthma and depression. Prevention includes treating persons in whom important disease is present so that their function is returned or preserved to allow continued activities of daily living and, optimally, return to work or other activities.

These examples show that virtually all good medical care has an element of prevention. The effective action of physicians in preventive medicine requires a knowledge not only of conventional medical interventions, but also of life context and behavioral or social interventions that contravene the impact of habits or activities that could lead to disability or dysfunction. The patient's skin is no longer the boundary of medical knowledge. The modern sense of prevention is heavily oriented toward the active participation of patients, with the individual physician (if doctors are involved at all) as teacher. The modern sense of prevention involves a different and more active understanding of the relation of persons to their bodies, their well-being, and their future. It also requires a greater comprehension of normal function as opposed to abnormal function and structure. It requires a greater understanding of human development and extends the spectrum of potential for change into old age rather than, as is usual, seeing childhood as the paradigm. As a field of knowledge, the surface of preventive medicine has hardly been scratched. It is important, however, to avoid getting caught up in popular ideas that can lead to overenthusiastic embrace of questionable prevention strategies (Russell 1994).

#### The Physician as Therapeutic Instrument

When the primary subject and object of medicine is the patient, then the physician as person becomes the central diagnostic and therapeutic instrument. In this setting, the personal skills of the physician become a

fundamental aspect of clinical care: not an epiphenomenon (as they are when disease is the focus), but in partnership with science and technology.

### Clinical Judgment

Medicine is a judgment profession, but judgment is often taught by precept alone, and then usually not explicitly. Clinical epidemiology and clinical decision making are new fields that have brought into clinical medicine the methodology of epidemiology and decision analysis as the basis for analyzing clinical events. These tools represent a major step in systematizing medical judgment, and they should be part of every clinician's training. As currently described, however, they include only a portion of the spectrum of clinical judgment because they deal almost exclusively with measurable information. Clinical medicine abounds with important areas of nonquantifiable information – that is, subjective data, values, feelings, and even intuitions – each of which must be given its weight and, like that which is measurable, considered in the terms of confidence limits, validity, accuracy, and precision. Primary care physicians should be able to use all kinds of information to examine their presuppositions, separate and examine the values at issue in each judgment, decide on goals and argue the alternatives, decide on priorities of judgment, determine if and how to intervene, and be able to evaluate the outcome. Clinical ethics, although obviously part of judgment, is a separate and very necessary aspect of training.

### Information Handling

The ability to have easy access to the remarkable increase in information about medicine, medical science, and related subjects is an essential aspect of any physician's skills. Thus, training programs for generalists must ensure that trainees be able to accomplish this access and have an understanding of the new field, often called informatics, that is so dependent on the use of the computer (Blots 1984).

### Communication Skills

Spoken language is the most important tool in medicine. Virtually no interaction between the patient and the doctor takes place in its absence. Despite the long acknowledged place of history taking and talking with patients, communication skills continue to languish. The current medical school curriculum universally includes history taking, but rarely other aspects of communication with patients. Because the telephone has assumed such a major place in medicine today, the special method of inquiry about illness and the altered diagnostic goals it requires must be taught (Wood, Littlefield, and Foulds 1989). The basic workings of the spoken language should be included in training programs if communication is to achieve maximum effectiveness. Remember the childhood chant, "Sticks and stones can break my bones but words can never hurt me"? If you want to know how wrong that is, listen to a physician untrained in communication skills tell a patient bad news (Buckman 1989). In the last several years a number of well-grounded studies on interviewing and doctor-patient communication have appeared (Cassell 1985a,b; Stewart and Roter 1989; Billings and Stoeckle 1989; Coulehan and Block 1992; Epstein et al. 1993). Because spoken interactions are ubiquitous, it is necessary to extend training well beyond merely interviewing or history taking. Critiquing audio or videotapes of the interactions of trainees with patients is useful, but it is a halfway methodology. Unless there is systematic instruction in how language works, it would be like teaching physical diagnosis without a basis in anatomy or physiology.

### The Doctor-Patient Relationship

Every step of medical care requires the cooperation of the patient. People, sick or well, do not do things just because they should, or because a doctor tells them to. They must trust that the physician is knowledgeable, is correct in this instance, and cares about them. The world of sickness is filled with far more uncertainties for patients than for physicians; as the threat of a disease increases, each decision seems more crucial and the room for error narrows. The patient's uncertainties increase, and firm resolution becomes less possible. Patients solve this awful dilemma by trusting their doctors. They say, in essence, "I may not know what to do, but my doctor does." The vehicle that makes it possible to trust someone whom they may have known for only minutes



(in emergencies) is the doctor-patient relationship. I have argued elsewhere that this is a relationship based in the physical and emotional effects of social relationships (Cassell 1991). It is bilateral, as crucial to the doctor as to the patient. When it functions best, this relationship assumes a benevolent form that enables patients to change at every level of the human condition and gives doctors the opportunity to extend themselves at every level of the human condition. Just as it may do immense good when properly employed, so it may do harm in the hands of doctors who are ignorant, careless—or worse. Its careful, systematic, and disciplined development and use are essential to good doctoring. This is especially the case in primary care medicine where the doctor performs such broad functions. One test of the training of primary care physicians, then, will be their ability to develop and maintain effective therapeutic relationships. In one setting this ability can be actively taught and encouraged; in another, discouraged and disparaged. The revitalization of primary care medicine through a return to the primacy of the patient can only be accomplished in an atmosphere that recognizes, and enhances, the value of the doctor-patient relationship.

### The Relationship between Primary Care Physicians and Specialists

Otto Guttentag, who virtually alone explored the philosophical basis of medical practice and the role of the physician for decades before others followed, always spoke from the perspective of the attending physician. He believed that the attending physician is the central figure because his or her cardinal and ultimate concern is the welfare of the individual patient (Guttentag 1979). From this flows the necessity of there being one physician, the attending physician, who holds primary responsibility. It is a requirement with an old-fashioned flavor in the present era because of its taint of hierarchy and the notion of responsibility. In a time of almost radical egalitarianism and the dominance of rights language, Guttentag's beliefs seem *passe*. Reflection on the effects illness has on people, particularly serious illness, immediately brings his ideas back to life. The movement to return to primary care physicians is not to establish their function as gatekeepers, but to restore them to the role of the patient's attending physician. It is from this perspective that their relationship with specialists should be viewed.

Patients frequently self-refer, or insist on referral to specialists, even when their primary physician does not concur, largely because most people believe that specialists know more about diseases than the generalist does. Although this may be true, who knows the most about the patient's disease is not the central question. Does the patient have the disease of the specialty? Is this disease the source of the patient's problem? Is the specialist better able to help the patient than the primary physician? If more than one specialist or disease is involved, who is coordinating the patient's care? The first two are diagnostic questions that should be answered by a patient's primary physician, with or without the help of a specialist. Specialists tend to think in terms of their specialty, to have less knowledge of contextual or personal factors in the illness, and to use technology earlier and more extensively in the diagnostic process than generalists do. There are many specialists who are superb clinicians to whom these caveats do not apply, but our question is more general. Who, by training, should better be able to make a complete diagnosis—supplying not only the name of the disease, but also the threat it holds for the patient, the reason it is advancing on this patient at this time, its relation to the patient and the patient's other difficulties, and its place in the patient's environmental and relational context. Finally, and most important in the long run, is the question of who is most prepared to care for the patient.

When these questions have been answered, it is possible to specify the role of the specialist. Referral to a specialist is appropriate if a stage of a specific disease is identified whose complexity is beyond the capacity of the primary care physician. Suppose, for example, that a patient has noninsulin-dependent (Type II) diabetes mellitus that has remained poorly controlled despite the best efforts of the primary physician; referral is indicated. As another example, a patient with insulin-dependent (Type I) diabetes mellitus has been successfully cared for (excellent control, good cooperation by the patient, and no or well-controlled diabetic complications) by the primary care physician for some time, but recently there is evidence of advancing renal or neurological complications. This patient should also be seen by a specialist. Whether the specialist should continue to care for the patient or provide guidance to the primary care physician depends on the complexity of the problem presented by the disease. In general, specialists should give their opinion to the primary care physician, who is



the patient's attending physician, so that they can jointly decide with the patient where he or she is best cared for. The relationship between specialist and primary physician should be flexible and consensual enough so that the patient can be seen by both, can remain with the primary physician and obtain help by telephone or other means, or can remain with the specialist until the particular need has passed. The specialist should be teaching the primary physician about the disease, and the primary physician should be teaching the specialist about the patient. On the other hand, if primary care physicians are to care for patients with diseases in other specialties and not merely refer on the presumption of a diagnosis, they must be taught how to take responsibility for the care of patients who have these diseases (Renner et al. 1990; Henrich, Rahn, and Feibach 1992).

The patient whose disease is well managed, whose other problems are handled satisfactorily, and who is able to talk comfortably with both specialist and primary care physician will probably be content with whatever arrangement is reached. Ultimately, if the patient is not happy, a change in the method of care is essential. Nobody except patients themselves can make the final judgment as to whether their needs are being met.

Some diseases are so complex that a doctor specifically experienced in their treatment should assume the role of attending physician and be the patient's primary caregiver, assuming the consent of both patient and primary physician. Examples are late-stage congestive heart failure or chronic obstructive pulmonary disease, very brittle diabetes mellitus, advanced or rare neurological disease or injuries, severe inflammatory bowel diseases, and diseases unique in their manifestation and treatment like cystic fibrosis or end-stage renal disease. In such instances, however, the specialists should also attempt to meet their patients' other simple problems. Patients should not be returned to the primary care physician for colds or the like, as if such minor problems were beneath their interest. This suggests that the specialist has a poor relationship with the patient and the primary care physician.

In treating patients with less complex problems, primary care physicians should have access to the technology commanded by specialists without having to turn the patient over to them. For example, the primary care doctor should be responsible for decisions about endoscopy, a diagnostic technology for which he or she should receive specific training about its indications for use. As always, of course, the person whose hands rest on the instrument has the last word. In general, however, when a specialist and a primary physician disagree, they should seek another consultation.

Cancer is a disease whose treatment often exemplifies the best and the worst features of specialist referral. It is present practice to refer patients with cancer to an oncologist. Usually, if the patient requires ongoing therapy—radiation or chemotherapy—the oncologist will take over their care. If the patient develops another, nonmalignant, disease, he or she may be referred back to the primary physician or, as likely, to another specialist. Thus, at a time of real sickness, when patients require the care of someone with whom they have developed a relationship, they find themselves under the care of a stranger, or, more commonly, a group of strangers. For the most part, oncologists are not better trained than other physicians in communicating with patients, in the psychosocial dimensions of illness, or in the general care of the sick. In fact, they may be less prepared in these areas. As the development of the hospice movement attests, they do a poor job of caring for the dying and have only lately begun to provide adequate symptom control. Oncologists should not be faulted for these lacks; they are trained in the treatment of cancer. They know what treatment is currently favored, which disease state is best suited for it, and how the treatment is optimally administered. Many physicians who are not oncologists seem afraid of treating patients with cancer. They do not know how to administer chemotherapy, even under an oncologist's direction, and are no better at communication, psychosocial issues, symptom control, or the care of the dying. For the primary physician, as distinct from oncologists, these lacks are reprehensible because the need for them can arise in the care of any patient. In general, primary physicians should be able to care for patients with cancer under the direction of, and in consultation with, oncologists. With access to chemotherapy and radiation units, or by administering chemotherapy themselves, the primary care physicians should remain the patient's attending physician. Occasional patients, like those with hematological cancers requiring bone marrow transplantation, are better transferred to an oncologist, who would then become the patient's attending physician.

The relationship between primary physicians and specialists should be one of cooperation, mutual dependence,

and teaching, all in the service of their patients. It is of interest that the relationship between specialist and attending physician pictured here is similar to that described in "The Principles of Medical Ethics of the American Medical Association," adopted in 1912 (Leake 1975, 259ff). This does not indicate a belief in returning to a fancied past. The patient care problems of "old medicine" arose from a paternalistic view of patients as children who were voiceless and whose illness stripped them of their personhood. That view of patients made medical care impersonal—not truly related to the sick person. In the last two decades, the 1950s phrase "Treat the patient as a person" has become a truth. The patient has become a person. Strangely, the high-technology-specialist medicine that grew up alongside the growth of civil rights and the evolution of the personhood of patients again depersonalized the patient (and the physician) because of its focus on disease states and individual organ systems. The emphasis here on the centrality of the attending physician in relation to patients and specialists is changed by an understanding of the difference between the modern patient and the patient of the past.

## Psychiatry

Many studies have shown the frequency with which patients who have psychiatric disorders seek help from primary care physicians. Sometimes their symptoms or distress are obviously emotional, and at other times the psychiatric disorder is masked by somatic symptoms. Patients who abuse substances frequently are poorly recognized as such and often go first to general medical practitioners inadequately trained for their treatment (Kamerow, Pincus, and Macdonald 1986). In addition, virtually no serious ongoing or chronic disease is without an important emotional component. Generally, the training of primary care physicians poorly prepares them to handle either the psychological component of organic illness or manifest psychiatric disease. Preventive medicine, when it is concerned with promoting general well-being and optimum function, cannot disregard psychological aspects of everyday life and the connection between overall health and mental health. The care of the dying and of patients who are suffering requires an understanding of the inextricable intertwining of psychological, social, and physical aspects of illness. All of these points underline the special importance of the relation between general medicine and psychiatry.

Primary care physicians must learn to manage basic psychiatric disease, just as they learn to manage disease in other specialties. Current levels of ignorance frequently evidenced by general internists and family practitioners are no longer acceptable. On the other hand, there are real difficulties to be faced both conceptually and practically in the integration of psychological and medical skills (Brown and Zinberg 1982; Gropper 1987). Psychiatry is itself in flux, however, as it begins to abandon psychodynamic models of treatment and illness for the more descriptive stance represented in the continuously revised editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III, DSM-III-R, and DSM-IV) and for the psychobiological understandings that underlie modern psychopharmacology. These problems must be faced directly in training. Otherwise, the primary physician is merely being exhorted to "be holistic" without being given the skills. A whole literature exists that is concerned with training primary care physicians in mental health practice (Pincus 1980, 1987; Pincus et al. 1983; Franco 1993).

## Who Will Teach Primary Care Physicians?

The concept of primary care physician described in this essay centers on a return to the sick person as both the ultimate source of knowledge in medicine and the focus of care. The history of medicine is marked by periodic reawakening of this understanding. Invariably enticed away from the patient by their knowledge and theories, physicians must always return, forced back by the inadequacies of both. In every era, however, they come back to the patient knowing more. It is not different now. The kinds of knowledge and skills and the role of the primary care physician described here are different from what is generally found among general internists, family practitioners, and pediatricians. Who will be their teachers?

In the past there have been role models: physicians devoted to clinical medicine who cared for patients on the floors of modern medical centers. Such doctors are mostly gone from the teaching hospital, too old or forced away by the full-time/part-time faculty split that has been aggravated by economic competition between the two groups. Even the best clinicians may have difficulty explicitly teaching what they have learned by experience that

is not valued in the halls of scientific medicine. We must abandon the idea that a large group of teachers can be found in a short time or that whole classes of medical students can soon be taught the knowledge bases and personal skills. In the arena of primary care, students and house officers, if they are interested at all, have an unlettered moral imperative to treat "the whole patient," despite the strong countervailing forces surrounding them. They, and perhaps much of their faculty, are unaware of the process by which the present teaching of science and technology, as essential as it may be, distances them from patients and nullifies their best intentions.

I believe we must accept the realities that there are no adequately developed curricula, nor is there a sufficient cadre of teachers for training the type of primary care physicians described here. At the same time, my direct experience suggests that throughout the United States interested faculty and clinicians have created good programs in one or another, or even several, of these critical subjects. Significant resources are available for program development.

A diffusion model best fits the present situation. First, the teachers of the teachers, the directors of primary care programs, and the chairs in medicine, pediatrics, and family practice must become aware of the need for advanced programs. Not a lot of them; a few leaders will be sufficient. Through their leadership they must allow young faculty to be taught and to begin to teach other teachers. Courses have to be developed. Some departments of medicine believe the medical interview is the curriculum, and others accord the same honors to medical decision making or clinical epidemiology. These are necessary subjects, but not sufficiently broad or inclusive. There is a body of knowledge that graduating medical students do not command. Postgraduate curricula (and the primary care track in medical school) must cover the areas I have described. The best methods of teaching these subjects are not yet known. I have argued that it is time to return to systematic instruction in classrooms and seminars. There are many who would argue that teaching can only take place in ambulatory or hospital clinical settings. It is futile, however, to try to learn from patients without adequate skills. Ludwig Eichna, who returned to medical school as a matriculated student after his retirement as a chair in medicine, discusses the dangers of letting students work with patients before they know enough to make a contribution to care (Eichna 1980, 1983, 1991). One of the advantages of the kind of training in primary care I have described is that primary care residents and the specialty residents would teach each other their unique knowledge bases as they care for patients side by side. There is more than enough advanced material to support academic fellowships in primary care.

Accepting a diffusion model means learning patience. It will be years before there are enough teachers to go around and sufficient fully developed course materials. This period is also necessary for the development of a common language, unified purposes, and feedback from early teaching experiments. There is always the danger that while new programs will speak about, for example, communication skills, the importance of psychosocial elements, and the place of the community, they will teach them poorly because they lack adequate ideas or teachers. It will be sad if the inadequacies of the generalists trained in these programs are taken as evidence of the failure of the underlying concept. It is a hazard for which we must be alert.

Primary care will inevitably grow and flourish, but its progress will be hastened if money for its support is available. Nothing so focuses academic interest as program funds. This kind of training is fundamentally different from present medical education and requires specific attention. It resembles the development of non-Euclidean geometries that required the growth of awareness that there could be possible worlds that are not like our common-sense perspective of the everyday world. New ideas are held back more often by the belief that they are not new or that they have already been activated than by direct disagreement. Program support can help overcome these common obstacles as well.

#### Who Will Teach Before There Are Teachers?

New purposes will be pursued with old knowledge and skills. It cannot be otherwise. Primary care physicians will not initially be optimally trained, but if new programs are being developed, change will be in the air. The literature will reflect these developments, and physicians will begin to learn new skills. Postgraduate courses covering the

same materials will also proliferate. Current health system reform in the states and the private sector will have a crucial role in this evolution. If new systems treat physicians as the solution rather than the problem, rising morale will help spread new ideas. Health care changes based on older, simplistic views of primary care, surviving in the absence of educational support for these changes, will slow the diffusion process. Ultimately, however, primary care medicine will not begin to flourish for a decade or more, and there will be insufficient numbers of new training programs. In a nurturing environment of academic, political, and social interest, new teachers will spring up. In a medical world of struggle between the old and the new—which is the most likely scenario—fundamental interest in the care of the patient and the success of new ideas in better patient outcomes will gradually force change, cultivate teachers, and bring increasing numbers of students and physicians into the ranks of modern primary care.

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Results Found	3
Timestamp	16 October 2015 15:32

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