The Role of Psychologists in Primary Care: An Integrative Curriculum

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The Role of Psychologists in Primary Care:
An Integrative Curriculum

by

Gary Charles Hawley

A Doctoral Project submitted in partial satisfaction of the requirements for the degree of Doctor of Psychology

June 2002
Each person whose signature appears below certifies that this doctoral project in their opinion is adequate, in scope and quality, as a doctoral project for the degree of Doctor of Psychology.

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ABSTRACT OF THE DOCTORAL PROJECT

The Role of Psychologists in Primary Care:
An Integrative Curriculum

by

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Doctor of Psychology, Graduate Program in Psychology
Loma Linda University, June 2002
Dr. Kelly Morton, Chairperson

Psychologists have been service providers in the health care sector for many years. They are consistently recognized as valued members of health care teams but are not frequently included as primary care providers. Integrated primary care services that include psychologists are a positive step toward achieving a comprehensive model of patient care. The biopsychosocial model is suggested to supplant the current biomedical model for health and wellness conceptualization. Psychologists are trained in the dynamic interplay between biological, psychological, and social domains. However, education at the graduate level for psychologists working specifically in primary care has not been well conceptualized, developed or implemented. This paper reviews psychology’s history in relation to medicine, psychologists’ roles in health care, and the necessary training and skills to work successfully in primary care. An integrative graduate training curriculum for this purpose is presented.
Scope of the Problem

Psychologists have long been providers of health care services to patients in medical settings (Stone, 1979; Belar, 1996). However, they are not often full health care team members and many lack full staff privileges that physicians and other health care professionals enjoy. The widely used medical model of disease focuses treatment on the biological basis of illness therein excluding psychologists as health care providers (McDaniel, Hepworth, & Doherty, 1992). Specifically, this model excludes psychosocial treatments because psychological processes are viewed as separate from somatic functioning and as such have no influence on illness. Engel (1977) proposed a biopsychosocial model of disease that defines illness through an interaction of biological, psychological, and social components. Employing this model, health psychologists demonstrate how psychosocial components of illness can interact with biological components of illness thereby indicating the necessity of both psychological and medical interventions for healing (e.g., Spaulding, Jeffers, Porges, & Hatfield, 2000).

Engel (1977) advocates that not only psychology adopt the biopsychosocial model of disease, but all health care providers, as a comprehensive means of treatment. In fact, research has demonstrated the efficacy of this model in health care (e.g., Kimberly & Serovich, 1999). Clinical health psychologists have been utilizing the model to provide specialized services in both secondary and tertiary care settings. Some of the illnesses frequently treated by concomitant psychological services include AIDS, cancer, and cardiac disease (Christensen, Edwards, Moran, Burke, Lounsbury, & Gordon, 1999; Golden & Gersh, 1990; Meyer & Mark, 1995; Nelson, 1998). However, the biopsychosocial model alone has not been sufficient to include psychologists routinely in
medical care (Belar, 1991). Authors have proposed guidelines for psychologists working in primary health care settings (McDaniel, Hepworth, & Doherty, 1992), but psychologists are not typically included. This may be due to cost constraints and/or lack of information regarding the cost efficiency and efficacy of psychologists working in primary care. An additional important factor is that psychologists themselves are unsure of their roles in primary health care delivery (Pace, Chaney, Mullins, & Olson, 1995; Strosahl, 1995; Suinn, 2000).

A workgroup designated by the American Psychological Association (APA, 1998) has specifically addressed these issues. Psychologists and other healthcare providers must be educated on the roles of psychologists in traditional primary care settings. Recommendations from the committee include recognizing psychology at all levels of health care service provisions, asking for legislative support of psychology in health care, providing educational campaigns for various stakeholders on behavioral health care and the continuing need for financial support of psychologists in medical care settings. Perhaps the most important recommendation of the committee is to develop a model curriculum for training psychologists in primary care at all levels of graduate and post-graduate training. This bottom up approach will provide systematized and comprehensive training to health psychologists that has been previously difficult to acquire.

Aims and Objectives

This paper is an effort to fulfill the APA workgroup’s recommendation of developing a model curriculum for students of clinical health psychology emphasizing primary care at all levels of matriculation. Others have reviewed how currently
practicing psychologists may gain entry into the primary care arena (e.g., Belar & Deardorff, 1995; Bray & Rogers, 1995; Haley et al., 1998). However, it is perhaps more important that psychologists are trained in the beginning of their professional careers regarding how to work in health care systems. A review of the literature will provide support for psychologists working in primary care settings. Areas that provide such support include 1) the history of psychology in medicine leading to a discussion of the biopsychosocial model in health care, 2) recent trends of integrated models of care through interdisciplinary teams, 3) the efficacy and cost-effectiveness of psychologists as health care providers, 4) specific practice issues including clinical treatments and assessments in health care settings, and 5) educational training issues. In examining these issues, the need for a standard curriculum of training for clinical health psychologists to work in primary care will become evident. After considerations regarding the history of psychology and medicine as well as the current needs of primary care providers, a model curriculum will be described.
Introduction

The health care delivery system has changed. Within the last fifteen years, managed care organizations have transformed the way that health care is provided in America. Health care professionals are no longer afforded autonomy in delivering care to their patients. A capitated system now forces many doctors to spend long hours seeing more patients than ever before. They no longer have the luxury of knowing their patients' stories. All health related disciplines have been affected by managed care, including psychology.

Psychology's place in health care is reflected through its genealogy. Psychology was born from philosophy and, like medicine, has linkages to the basic sciences of physics, chemistry, and physiology (Misiak & Sexton, 1966). Throughout history, psychology's linkages to the medical field have been tenuous (Franz, 1912; Fuller, Walsh, & McGinley, 1997; Matarazzo, 1994; Stone, 1979). The current trend of integrated health care (spurred by managed care) has perpetuated a renaissance for psychology as the field enters the 21st Century (Johnstone, et al., 1995). Managed care organizations seek the least expensive treatments for patients that achieve good outcomes (Sabin, 1991). Psychologists are able to provide cost effective and efficacious treatments (e.g., cognitive-behavioral treatment of depression and anxiety) that significantly improve patient and cost outcomes.

Over the last century, this renaissance has allowed psychology to promote itself as not only a mental health discipline, but also as a broader health profession (Newman & Reed, 1996). Psychological interventions are recognized as legitimate, billable treatments by health care systems (Foxhall, 2000). Previously, interventions that
addressed the mind and body were solely the domain of psychiatrists because of their medical training within a biomedical model. Scholars in the medical community have more recently taken an interest in the biopsychosocial model of medical care (Engel, 1977). This model challenges the traditional biomedical perspective by integrating psychological and social domains with biological factors in understanding illness and this newer perspective is demonstrating positive outcomes.

Research indicates that including psychology in the delivery of general health care and establishing psychology as a collaborative provider of a primary health care team leads to positive outcomes for patients and their families (e.g., Bray & Rogers, 1995; Kadushin & Kulys, 1994). Although psychologists have been making a positive impact in health care delivery, they are not routinely utilized by all health care systems (Bray & Rogers, 1997). Furthermore, psychologists who attempt to provide services in health care settings find they are unprepared and unaware of what is to be expected of them and how they can be included. They then find themselves in need of further training (Johnstone et al., 1995).

The practice of clinical psychology in medical settings is not new (Stone, 1979; Strosahl, 1996). However, it has only been in the last two decades that clinical health psychology has demonstrated effectiveness in health care settings (Newman & Reed, 1996). Though psychology continues to make gains within the health care system, challenges have recently been presented that threaten psychology's future in health care delivery. These threats include capitation of services, dwindling financial resources, and competition from other mental health disciplines to provide services at a reduced cost (Belar, 1995; Nickelson, 1995). Psychologists are tackling these financial obstacles by
demonstrating to the health care community and managed care companies how cost
effective psychological treatments are compared to costly medical treatments for illnesses
(Groth-Marnat & Edkins, 1996; Kubiszyn et al., 2000).

Health care services are generally provided through a system of primary,
secondary and tertiary care level services. Primary care is medical care that is delivered
at the initial point of contact that a patient has within a health care system (American
Academy of Family Physicians, 1995). It attempts to be comprehensive in nature and
provides coordination of care services whether they be biological, psychological, or
social. If a primary care physician cannot provide a treatment to a patient because of lack
of resources or scope of practice issues, then he or she will refer the patient to the
appropriate specialist. The referred professional will provide secondary care services.
Cardiologists, urologists and oncologists are all forms of secondary care providers.
Tertiary service providers are those who will provide services following interventions by
either primary and secondary care providers. For example, if a person experiences a
heart attack and goes to the hospital, the initial treating physician will be a primary care
provider. If surgery is needed to remove an occlusion in an artery of the heart, the
surgeon becomes the secondary care provider. Following surgery, follow-up care will be
provided by additional care providers for rehabilitation. Physical therapists, respiratory
therapists and occupational therapists are providers of tertiary care. Psychologists have
become valued members of health care organizations and provide a number of secondary
and tertiary services to aid in diagnosis and treatment (Haley et al., 1998; McDaniel,
1995).
Rehabilitation psychology is one such tertiary care service. Psychologists in rehabilitation use skills based on clinical psychology, health psychology, and neuropsychology to provide care for individuals recovering from illness, surgery, or disability (Johnstone et al., 1995). Rehabilitation psychologists assess, diagnosis, and treat patients using a variety of methods; some are both general to the psychological field and others are specific to the rehabilitation field (Frank, Gluck, & Buckelew, 1990). They are frequently found as members of interdisciplinary teams who make positive contributions to patient care, such as reducing depression and anxiety, to enhance the patients' quality of life (Lichtenberg et al., 1998).

Unlike their traditional training in clinical psychology, clinical health psychologists are actively involved with a patient's care beyond providing individual psychotherapy. As members of interdisciplinary teams, clinical health psychologists provide necessary services for optimal comprehensive care. This may include roles as advocates, clinicians, consultants and/or case managers. They are full service specialist providers. As a cardiologist specializes in cardiovascular wellness, the psychologist specializes in the complex area of mental wellness. Psychiatrists have been traditionally trained in the medical pathology of mental illness and thereby provide examinations and treatment (e.g., medications) for illness. Psychologists have a more proactive role and may provide not only services for illnesses, but also for preventative care. Examples might include psychotherapy for adjustments to significant stressors like surgeries, techniques for smoking cessation, training for stress reduction, and psychoeducation for anger management (Bray, 1996; Paradis, Smith, Ackerman, Viswanathan, & Von Oiste, 1997; Porchaska, 1996). These treatments may not only prevent an exacerbation of
symptoms from a preexisting psychological condition, but may also be effective in
preventing an exacerbation of symptoms from a primary physical illness (Belar, 1996;
Bolman, 1995). For example, teaching cognitive modification techniques to a patient
diagnosed with Major Depressive Disorder (who tends to make cognitive distortions
which negatively color his world) will also reduce the potential for an exacerbation of
symptoms related to his cardiovascular disease (Taylor, Miller & Smith, 1996).

Belar (1995) notes that there are few graduate training programs that are specific
to clinical health psychology. Although many programs will train students to be
researchers in the field, few provide comprehensive training in the health care sector.
Typical training experiences may expose future clinicians to the provision of health
assessments, relaxation training, behavioral modifications or other applied techniques,
but the training lacks the breadth and depth of a comprehensive and systematic program
of study. For example, graduate schools do not educate students on the politics of
medical practice, the complexities of multidisciplinary teams, nor do they require
knowledge of medical sciences (i.e., anatomy and physiology and epidemiology). As is
the case now, many psychologists in the primary care field have learned their specialized
trade on the job. This creates unnecessary long hours of uncompensated independent
study and further difficulty in finding health care facilities educated in the benefits of
psychological services and willing to assist in the training of a psychologist who was not
formally trained in primary care through an accredited program.

Traditional clinical training is not sufficient for psychologists to be adequate
health care providers in primary care settings (Elliott & Klapow, 1997). Specialty
training is necessary for them to operate in systems of care dominated by a biomedical
model of health and disease (Belar, 1998; Corrie & Callahan, 2000). Such training should incorporate courses in basic medical sciences, medical treatments and health care management. This will provide the necessary foundations to understand biological wellness and illness, medical practice and the business of health care. Adding these components to a standardized core curriculum of clinical health psychology may also create some legitimacy in the minds of primary health care professionals who believe that psychologists have neither the training nor the skills to practice in the primary health care arena.

In developing a curriculum for future clinical health psychologists to follow, psychology's history should not be overlooked. As a historian of health psychology, Stone (1979) notes that psychology has the longest history with health systems of any behavioral or social science (p. 53). Psychology is rooted in philosophy, as is medicine. However, the exclusion of psychology in medicine at a critical period in psychology's history altered and defined psychology’s path for several generations of psychologists.
Historical Viewpoints

Psychology's History

In order to understand psychology's place in medical settings, a brief, but comprehensive, survey of the history of psychology and health psychology is necessary. This will provide the background necessary to understand (1) psychology's position on the mind-body problem (the foundation of the biomedical model), (2) its development along with the medical field, (3) its eventual exclusion from medicine, (4) the development of health psychology, and (5) the creation and implementation of the biopsychosocial model of health care in psychology and medicine.

The term “psychology” was coined by Phillip Melanchthon (1497-1560) from two Greek words, psyche (the soul or mind) and logos (knowledge or study). In essence, the word meant the study or knowledge of the soul (Misiak & Sexton, 1966). However, the term did not become popular until 100 years later when Christian von Wolff (1679-1754) used the word to distinguish empirical psychology, in which data is obtained and examined, from rational psychology, where ideas are merely pondered, in two separate treatises (1732, 1734). The essence of whether psychology is primarily an empirical science or a rational science continues to be debated today. However, at the time of its formal creation, psychology developed out of the same philosophical roots as medicine. Philosophers contemplated the role of the mind in bodily processes. This issue would later create the split between how psychology and medicine view a person’s wellness.

According to Misiak and Sexton (1966), psychology's earliest history can be divided into two main periods. First, the Greek philosophers considered psychology through metaphysics in which they examined man's soul, its purpose, and how it related
to the body. This period lasted for 2000 years until the end of the Middle Ages. The second period lasted until the nineteenth century when attention shifted from studying the soul to empirically studying the mind. This second period of thought provided concepts and linkages to other disciplines that informs modern psychology today.

Rational Psychology

Psychology’s earliest roots can be seen in the work of the western philosophers in the seventh century B.C. (Leahey, 1994). These ancient Greek philosophers investigated many problems that are still the subject of psychological inquiry: sensation, perception, memory and concentration, personality organization, sleep and dreams, temperament, and even the effect of the mind on the body’s wellness. The most important figure of this time was Democritus (ca. 460-370 B.C.). He developed one of the first scientific notions about thought through his teachings of atomism. He taught that tiny particles made up the entire universe, including the body and the soul. All living and nonliving matter, were composed of the same particles, the atoms. Following Democritus was Plato (427-347 B.C.). He shifted from a monistic system to a dualistic system (Schultz & Schultz, 1999). He proposed that the human soul is an entity that has a life of its own before residing in a person’s body. While there, the soul is able to experience the material world through man’s sensory systems. The soul is then set free once more when the body dies.

Plato struggled with how a person’s cognitions can develop out of flesh and blood. He developed the idea of the soul as a way to explain a life force within a person. However, his ideas separate man’s body from his mental life, which resides in the soul. He does not need to explain how the soul works because it is a spiritual entity that has special properties. Within a biomedical model of disease, there is no need to take into
account human cognitions because the mind is separate from the body as in Plato’s view. The focus of an illness is solely on the biological processes of the body. Conversely, Democritus discussed a soul, yet it comes from the same biochemical properties that make up the human body. Therefore, the body and the soul are inextricably linked together by these properties. They likely interact and function together as a bodily organ with its corresponding system (e.g., the lungs working with the rest of the components of the respiratory system). This idea is similar to a biopsychosocial model that integrates components of a person into one functioning unit.

Of all the Greek philosophers, Aristotle (384-322 B.C.) could be credited with the true origin of psychology (Misiak & Sexton, 1966). He directly opposed Plato’s dualistic views and stated that the soul should be the focus of study. He was the first to write a comprehensive discussion about fundamental psychological issues in his work, De anima, or “On the Soul.” In this writing, Aristotle became the first historian of psychology by reviewing what his contemporaries had said about the soul and its influences on man’s behavior. Aristotle developed the hylomorphic doctrine to describe how the soul interacts with man. Hyle meaning matter and morphe meaning form, Aristotle stated that the universe is made up of matter. This matter must have form to exist. Conversely, shape or form cannot exist unless composed of matter. Therefore, Aristotle proposed that matter and form create an interdependent system for existence. The soul, according to Aristotle, is form; the body is matter. Together, they create an integrated unit. This is similar to the biopsychosocial model in that all components of a person create a unit that is interdependent.
René Decartes (1596-1650) moved away from psychology as the study of man, to the study of the spiritual mind of man (Leahey, 1994). Perhaps Decartes’ most infamous contribution to psychology is his Cartesian dualism, or the mind-body problem. As distinguished from the monistic beliefs of some Greek philosophers [that the universe is composed of the same matter (Democritus’ atomism); that the body and soul form an integrated unit (Aristotle’s hylomorphism)], Decartes reverted to an earlier belief of Plato’s that the universe is dualistic in nature (Klein, 2000). Decartes believed that the body and the soul are separate and interacting with one another. He wrote of these beliefs in his doctrine of interaction. In it, he described how the body is like a machine and that it functions through the use of “animal spirits.” These spirits flow through the body allowing for a mechanism of action and movement. The soul is separated from the material body and is the life force of man. The interaction of the soul and the body is facilitated through the pineal gland in the central part of the brain. The biomedical model used by medicine today is similar to Decartes’ dualism whereby physicians view psychological issues (i.e., animal spirits) as separate entities from biological issues (i.e., the pineal gland).

Decartes, like Plato, strived to incorporate biological knowledge in the functioning of human behavior. However, because it is not easily observable from an anatomical or a physiological process, his conclusion was to separate the intangible thinking and feeling part of a person from the tangible body. Physicians ascribing to the biomedical approach who are presented with a patient whose physical symptoms have no apparent physical cause may be limited in their approach to treatment because their model of training is based on Decartes’ dualism. Therefore, they are unable to
incorporate psychological components in the patient’s evaluation, becoming frustrated and unable to treat the illness (Engel, 1977).

*Empirical Psychology*

Decartes was met with criticism because he proposed that a material being interacted with a non-material force (Misiak & Sexton, 1966). Because of physics’ dominance of the sciences at the time, Decartes could not demonstrate scientific support for his ideas. His Cartesian dualism was eventually shown to be incorrect by Luigi Galvani (1737-1798) who stimulated an amputated frog’s leg with electrical current. The frog’s leg twitched, indicating that there was muscle movement. According to Decartes’ model, the frog’s leg should not have moved because it is separated from the animal spirit force that guides its action (Klein, 2000). Although this seemed to disprove Decartes’ idea at the time, the debate over the mind-body interactions has persisted in psychology to this day.

David Hartley (1705-1757), a physician, attempted to bring together philosophy and physiology in *Observations of Man*. He was the first to reject Decartes ideas regarding “animal spirits” controlling the mechanisms of the body. Instead, he made use of what was known about anatomy and physics to create associations between the sensory experiences and the mind. He recognized the importance of examining the influences of biological components and their effect on psychological phenomenon. Hartley ascribed associationism to explain phenomena such as emotion, language, memory and imagination through the process of interaction between biology and psychology. Two other associationists, William James (1773-1836) and John Stuart Mill (1806-1873) furthered Hartley’s ideas by explaining mental processes by associations
Specifically, Mill introduced chemical properties and substances as the basis of mental associations. This alliance with chemistry was yet another attempt to link the discipline of psychology with other empirical sciences to verify psychology's legitimacy (Misiak & Sexton, 1966).

Psychology continued to develop theoretically by applying empirical methods with the assistance of the German philosophers and scientists. The most notable philosopher of this time to influence psychology was Immanuel Kant (1724-1881). Boring (1950) tells us that Kant claimed psychology could not be an empirical science for two reasons: (1) psychological processes only vary in one dimension (time), therefore, they cannot be studied mathematically, and (2) psychological processes are internal and subjective, therefore they cannot be measured. However, two other German scientists responded that Kant's assertions were not correct. Johann Friedrich Herbart (1776-1841) responded to the first issue by demonstrating that mental entities vary in both time and intensity. Because of this, the change in the intensity over time could be represented in a mathematical equation. Gustav Theodor Fechner (1801-1887) addressed Kant's second issue through studies of sensation, psychophysical procedures, and the concept of the just noticeable difference (JND) that Fechner measured on a strength of sensation scale.

During this prolific period of psychophysical experimentation, Wilhelm Wundt (1832-1920) combined the principles outlined by Herbart and Fechner with the methods of experimental phenomenology to establish the first psychological laboratory in 1879 in Leipzig, Germany.

Around the same time, scientists in the United States were producing empirical evidence to promote psychology as a science. Although William James (1842-1910) is
credited as the “father of American Psychology,” nearly 350 American scholars, spanning a 138 year period before him, published close to 1,000 articles about the fundamentals of psychology (Boring, 1950). Yet, in James’ seminal work, *Principles of Psychology* (1890), the concept of stream of thought was introduced as a means of understanding human consciousness through psychology. As a medical doctor, James began investigating the role of values and behavior on health and disease following the completion of *Principles*. James became an advocate for American psychotherapeutic practices that were criticized by the medical profession. James’ research lead him to understand a connection between physical health and wellness and emotional well-being which he relayed to graduate students at Harvard University. The information he presented became the focus of others’ work on mental illness and empirically validated therapy techniques (Boring, 1950).

Although James studied the mind-body dualism issue formulated by his predecessor Decartes, he did not resolve the issue by the end of his career (Misiak & Sexton, 1966). James encouraged others to study the dualism debate, but he was not optimistic that a concrete answer would be found. He believed that there was not enough evidence to support either a monistic or dualistic view because mental processes are not directly observable and therefore not testable. Despite this, James’ work on establishing psychology as an area of scientific inquiry in America provided the groundwork to establish subdisciplines in the field. One branch of psychology that would follow given psychology’s history of philosophy, physics, chemistry, and physiology is medical psychology, later to be termed health psychology.
Health Psychology

The emphasis on the scientific disciplines (e.g., physiology, chemistry, and physics) in psychology’s early history would seem to lead naturally to the subdiscipline of health psychology. In fact, many of the scientists from psychology’s past were not only philosophers but also medical doctors. This may also explain why they were invested in discovering the relationship between psychological and biological processes. William James articulated psychological principles and recognized a direct relationship between a person’s psychological and physical states.

Following the historical markers established by Wundt’s psychological laboratory and James’ publication of Principles of Psychology in 1890, the American Psychological Association (APA) was founded in 1892 (Boring, 1950). The APA allowed scientists and researchers to share information regarding psychological phenomenon. A short time later, in 1896, Litmer Witmer established the first psychological clinic at the University of Pennsylvania. In that same year, Sigmund Freud used the word “psychoanalysis” for the first time as he established his own school of thought. Based on Witmer’s model, other psychological clinics were set up around the world. As clinical psychology began to develop as a discipline, medicine also flourished. These two fields, which had been previously bound as siblings through philosophy, were beginning to develop separate paths in understanding human functioning.

In 1911, the APA held the first conference on psychology and medical education (Stone, 1979). At the symposium, John Watson and Shephard Franz proposed that the teaching of psychology to medical students was as important as learning the classical foundation courses like basic sciences, anatomy and surgery (Matarazzo, 1994). They
also presented the importance of psychology to the medical field by asserting that many physiological underpinnings are tied to mental events. They believed that these mental events (i.e., feelings and sensations) would allow psychologists to assist physicians in understanding and evaluating the effectiveness of their treatments (Stone, 1979). However, those who developed the first systemized medical schools in the United States thought otherwise.

Abraham Flexner and other medical leaders had come together to design a rigorous standardized curriculum for the modern physician in the early 1900's (Matarazzo, 1994). This formalized training would establish the prototype of medical training curriculum in America. The four-year curriculum proposed included two years of basic sciences and two years of clinical sciences. It was first established in 1893 at the fledgling Johns Hopkins University medical school. Important as this formal curriculum was for the history of medicine, it cast a dark shadow on psychology for the next century. Curiously missing from the training curriculum within the first two years of “basic sciences” was psychology. In 1910, Flexner mandated that this curriculum be implemented in all of the nation’s medical schools. By the time that Watson and Franz made a plea for psychology to be included in medical education (thereby strengthening the relationship of psychology and the medical disciplines) in 1911, it was already too late to stop the wheels that had been set in motion. Matarazzo (1994) observes that it would take five decades for psychologists to again play a significant role in medical education and therefore in medical care.

Ironically, Johns Hopkins University housed the first medical school with a systematic curriculum and was the first to introduce the four year curriculum for the
doctor of philosophy in psychology in 1883 (ten years before the medical curriculum was established). Later, George Engel, the creator of the biopsychosocial model, received his medical training at Johns Hopkins (Ader & Schmale, 1980). Thus, the institution that founded the prototype for the national curriculum of psychological study also produced the medical school curriculum that excluded psychology as a part of medical science. It took alumnus Engel to reintegrate the two disciplines.

After the formation of a standardized medical training, psychology began to shift its attention away from medicine to behavior. Psychology more formally established itself as an academic discipline while the different schools of thought, behaviorism, structuralism, associationism, functionalism, gestalt psychology, and psychoanalysis battled over psychological explanations of behavior (Stone, 1979). For the next several decades, psychology occupied itself with attempting to establish a unified identity.

The APA began to develop conferences to promote the science of psychology and the establishment of psychology as an empirical discipline (Stone, 1979). An attempt was made to create a formal definition of clinical psychology as well as develop educational standards. The Boulder Conference, held in 1949, did just that. The attendees developed the definition of a clinical psychologist as one who is informed by scientific research methods as a practicing professional. In a number of conferences that followed, members of the APA formed an accrediting body that would hold institutions to standards of educational requirements for the training of new psychologists.

Around the time APA established educational standards, the medical community began to reexamine the role of psychology in health care. Robert Felix, the first director of the newly formed National Institute of Mental Health (NIMH) began to take an active
interest in what psychology had to offer the medical community by funding psychology graduate programs (Matarazzo, 1994). Felix also recognized the importance of the basic sciences and how they contributed to the understanding of medicine and public health. What was more important for psychology was that he believed that “psychology can and should become one of the basic sciences to the entire public health field” (cited in Matarazzo, 1994, p. 12). Medical schools then began hiring psychologists because of influential people like Felix and because of a high demand for advanced degrees after World War II. There was a change from a few psychologists in medical schools before the war, to 255 in 1952 (Mensh, 1953), to 3500 by 1992 (Matarazzo, 1994). Eventually, the first department of medical psychology was established at the University of Oregon’s Medical School in 1957. This was the precursor to the discipline of health psychology as it is known today (Stone, 1979).

Over the next twenty years, the subspecialty of health psychology took many forms before being named “health psychology”. Because psychologists were gaining more prominence in medical schools, the term “medical psychology” was used to describe those psychologists working in the medical community (Stone, 1979). Other labels were also used such as “psychological medicine” or by incorporating the areas in which psychologists worked, such as “pediatric psychology”. Others still used psychology’s ancient history, specifically Decartes’ mind-body inquiry, to formulate “psychosomatic medicine” (Buckley, 1978). Health psychology was finally proposed in the late 1970’s. All of the names that were used for health psychology from the 1950’s represented the same concepts that currently comprise health psychology, or “behavioral health” as it is more commonly called in health care settings today.
The techniques of health psychologists varied greatly from 1950 to 1970 (Stone, 1979). The researchers and scientists in the "medical psychology" sub-discipline studied the effects of psychological processes on physiological illness and disease (Norton, 1982). The "psychosomatic medicine" techniques were largely psychoanalytic in nature and were informed by the work of Freud. For example, studies were conducted on patients with ulcerative colitis utilizing psychoanalytic interventions (Buckley, 1978). The results of this study and of others like it were less than promising. Health psychology began implementing behavioral techniques such as behavior modification, relaxation training, systematic desensitization, and biofeedback to treat patients with medical illnesses such as chronic back pain, migraine headaches and cardiovascular disease (Karasu & Steinmuller, 1978; Stone, 1979). The techniques resulted in positive patient outcomes and health psychologists continue to utilize these techniques today. These findings again suggested that a person’s physical illness has underlying psychological components. Thus, for successful treatment, a holistic approach must be used that incorporates psychology, biology, and ecology (Buckley, 1978; Gottlieb & Cooper, 2000; Levy, Pollak, & Walsh, 1994). This was the foundation of the biopsychosocial model that now drives much of health psychology’s research and practice.
The Biopsychosocial Model

Clinical psychologists continued to include biology in their psychological formulations as a way to understand the whole person. Whitaker and Malone (1953) in *The Roots of Psychotherapy* discuss biological underpinnings to behavior and assert that a person’s biology must be considered to fully understand psychological experience. Bowen’s (1976) ideas regarding the importance of developing an applied theory of human behavior include concepts that have a distinctively biological and natural science flavor. Minuchin examined family dynamics and how it related to physical illnesses within the family (Minuchin et al., 1975). Thus, researchers and clinicians were not only incorporating the importance of human biology on psychology, but also building the foundations of a model that showed the interdependence of biological, psychological and social factors on a person’s mental health and general well-being.

George Libman Engel was a physician who would have a profound effect on medical training and health psychology (Ader & Schmale, 1980). Engel was influenced at an early age by his uncle, renowned physician Emanuel Libman, who combined clinical practice and research. Engel and his twin brother became interested in the sciences and would often conduct team-based “research” experiments on amoebae while attending Dartmouth College in the 1930’s. Shortly thereafter, the two went to medical school at Johns Hopkins University. Engel learned much from his medical training, but was most influenced by an internship rotation at Boston City Hospital in 1937 where he studied under Soma Weiss. Engel was particularly fascinated by Weiss’ bedside method of combining patients’ clinical data and physiological measurements to develop a
medical conceptualization. This was in stark contrast to Engel’s previous experience of performing laboratory tests to formulate an opinion about the patient’s diagnosis.

Following medical school, Engel taught and practiced. While at the University of Rochester School of Medicine in New York, he began training in psychoanalysis, an area that he became interested in years earlier. Although he had not completed a formal residency in psychiatry (a board requirement), this fact was serendipitously overlooked when Engel sat for, and passed, the board examination in psychiatry (Ader & Schmale, 1980). During his years as a physician and psychiatrist, Engel combined psychotherapy and general medical practice in the delivery of patient care. He collected data over a six year period, and then examined the trends. Increasingly frustrated with the traditional biomedical model that was informing medical practice, Engel set out to develop a broader model of disease that would incorporate those facets of patients that were being ignored and therefore limiting the quality of patient care.

**Biomedical or Biopsychosocial?**

The disease model that had been embraced by medical science before Engel was the biomedical or medical model of disease. Its history dates as far back as the ancient Egyptians, and likely beyond, as man began examining human biology as it relates to illness. Later, the Greek philosophers, as mentioned previously, took an active interest in this pursuit. The biomedical approach attempts to analyze, organize, and classify data from human biology as it relates to illness and disease (McDaniel, Hepworth, & Doherty, 1992). Specifically, the pathology is reduced to its simplest form of chemicals and particles. Abnormalities can then be discovered and diagnosed. Treatment will follow in
a similar way by impacting the diseased matter with biological means (e.g., surgery or pharmacotherapy).

Engel’s concern was that this idea separates out other crucial psychosocial components he believed influenced wellness and/or illness (Engel, 1977). His proposal was to bring all of these components together in a monistic approach suggested by Aristotle centuries before. Using a systems based view, Engel proposed that the biological, psychological, and social aspects of a person are interdependent and inseparable. Engel (1980) presented the following example of how to clinically apply the biopsychosocial model. A man has been taken to the hospital because he is experiencing a myocardial infarction (a biological event). Following immediate treatment, he is interviewed to evaluate, what Engel calls, stabilizing and unstabilizing factors that may contribute to his condition. It is discovered that he is a conscientious person who cares a great deal about how others view him (psychological factor). When he began experiencing symptoms of a cardiac event, he was reluctant to tell his employer because he did not want to be viewed as a weak person. His employer convinced him to seek medical care and verbally reinforced him for seeking care (social support factor). A treatment team utilizing a biopsychosocial approach would quickly assess such interactions within the person, the illness and the environment to guide diagnosis and treatment (Belar & Deardorff, 1995). There might be specific treatments for each factor: pharmacotherapy, exercise and a healthy diet for the biological component, brief psychoeducation on lifestyle change and stress reduction techniques for the psychological component, and possibly psychotherapy for the patient to achieve an open communication style and a better view of self with others for the social component.
Engel used the biopsychosocial model to debate psychiatry's role in the medical field. Thomas Szasz (1961) and other writers have suggested that psychiatry should be eliminated from the field of medicine because problems of mental health are not "true" medical or health problems. In his now infamous discourse (1961), Szasz states that mental illness is nothing more than a myth because it does not meet specific biological criteria used for disease classification. Others (e.g., Fink, 1988; Torrey, 1974) indicate that psychiatry focuses primarily on problems of living and less with "real" medical concerns. Psychiatry began to fall out of favor with other medical subspecialties and with the public. Armstrong (1987) suggested that psychiatry was in need of rescuing via a public advertising campaign that educates consumers regarding the psychiatrists sympathetic treatment of mental health issues compared to other medical doctors. A new way of viewing mental health issues in medicine was clearly necessary.

Engel saw his biopsychosocial model as not only informing psychiatry, but all of medicine (1977; 1978; 1980). He states that all medical illnesses have a psychosocial component. He rejected the notion that psychiatry, and medicine for that matter, should only be concerned with "disease." The strict adherence to this biomedical approach concerned Engel and he thought that it would lead to the fall of psychiatry. In his view, this excludes important information about individuals that health professionals can use to understand and treat disease.

Engel notes that the concept of disease implies that when a problem falls outside of the realm of "disease," then it should no longer be the concern of the physician (1977, p. 129). He states that there are only two possible alternatives to address where mental illness fits in current medical science: reductionism or exclusionism. Biomedicine,
according to Engel, tried to force diseases to fit into classifications in terms of their physical properties or be excluded (1977). In the case of mental disease, diagnoses are based on the physiochemical mechanisms that are the cause of the disease. However, what of adjustment disorders or other diagnosable illnesses that cannot necessarily be classified by this method? Engel comments that they have been traditionally examined by either a reductionist or exclusionist view. The reductionist must find the physical properties of the disease to diagnose using a biomedical model. If this cannot be found, the exclusionist will not accept the illness as a disease because it cannot be classified by its physical properties (i.e., Szasz, 1961).

Medicine was quickly adopting an exclusionist view of mental health problems. Engel’s hope was that the medical doctor could more effectively treat the illness by incorporating the known biological factors with the patient’s psychological distress and the meaning ascribed to the illness within the patient’s social context (i.e. family, culture, and religion). With this model, illness and wellness issues would neither be reduced nor excluded because all components of a patient’s functioning are viewed as important and taken into account. Another factor of significance was the role of the medical doctor in examining the patient’s illness to determine whether it was best handled within a traditional medical approach or within a “non-medical” approach as with psychology (Engel, 1977; 1980). Instead of surgery or pharmacology, a patient could receive verbal therapy and skills training that do not require a “medical” intervention. More recently, psychiatrists spend less time with and see fewer patients for verbal therapy and spend even less time with and see more patients for medication therapy (Weissman, 1996). Engel did not posit that all mental health problems should be treated by a physician and
recognized other disciplines that could assist in the treatment of mental illness. Therefore, psychologists have been given part of the domain of providing psychological interventions.

As psychiatry accepted the principles of the biopsychosocial model and incorporated them into the definition of psychiatry (Fink, 1988), so did psychology (Stone, 1979). Much has been written about how the biopsychosocial model can be incorporated into health care (e.g., Freedman, 1995; McDaniel, 1995; Sadler & Hulgus, 1990; Schwartz & Wiggins, 1986; Swisher, 1980; Weiss, 1980). However, these works are generally hypothetico discussions of the utilization of the biopsychosocial model as a model of illness and care. The question that remains is whether the biopsychosocial model is empirically demonstrated to be a viable model of care (Schwartz, 1982)? A number of research studies have tested the biopsychosocial model for conceptualizing illnesses and formulating treatment recommendations.

Applications of the Biopsychosocial Model

Clinical applications of the biopsychosocial model are plentiful. A few examples will be described here. Epker and Gatchel (2000) studied patients with temporomadibular disorder (TMD) to determine whether psychosocial factors predict the chronicity of the illness. A number of standard psychological instruments, such as the MMPI-2, were administered to the patients. The results indicate that the TMD patients who were “interpersonally stressed” were more frequently diagnosed with an Axis I mood disorder versus the “adaptive coping” patients. Because pain is a subjective experience, it is difficult to ascertain from the study if the pain was physiologically based or if some patients’ experience of pain were solely psychogenic in nature. However, the
interaction of psychosocial factors with biological functioning is apparent and assists with the prediction of health outcome.

Another study predicting outcomes with the biopsychosocial model examined frail elderly patients utilizing health care services (Rock, Goldstein, Harris, Kaminsky, Quitkin, Auerbach, & Beckerman, 1996). A randomized sample of acutely hospitalized patients over the age of 65 were examined in an attempt to predict which patients would remain in acute care beyond medical necessity. Results indicate that level of physical functioning status and living with a spouse are the most predictive factors indicating that patients will need an alternate level of care. Researchers found that for every unit of activities of daily living (ADL) functionality, the length of stay would be reduced by three days. For those patients who live with a spouse, this would shorten their length of stay by one week. Therefore, those patients who live with a spouse and have high ADL functionality would be expected to have a length of stay of eight days. Patients who do not live with a spouse and have low ADL functioning would be expected to have a length of stay of 39 days. Although a patient’s ability to perform ADL tasks is independent of a spouse at home, it is clear that having social support plays an important role in physiological functioning.

Many studies have examined the effects of psychosocial factors on heart disease. In one such study, Krantz, Sheps, Carney, and Natelson (2000) evaluated patients’ psychological factors that affected the progression of coronary artery disease (CAD). They found that those patients with significant psychosocial issues such as moderate depression or personality traits that interfered with applying effective stress reduction coping mechanisms results in more rapid disease progression. In another study, Murberg,
Bru, Svebak, Tveteras, and Aarsland (2000) evaluated depressed mood, disease-specific subjective health symptoms and mortality risk among patients diagnosed with congestive heart failure. At the conclusion of a two-year period of data collection, approximately 17% of the patients had died from cardiac failure. Results of the study indicate that the patients who had died had a significantly higher level of depressed mood. Finally, Helgeson and Fritz (1999) measured cognitive adaptation factors in patients undergoing precutaneous transluminal coronary angioplasty (PTCA). Six month follow-up data from 98% of the patients indicate that patients with better cognitive adaptation (e.g., optimism, self-esteem, and mastery) were less likely to experience further cardiac events such as coronary artery bypass grafting, PTCA, myocardial infarction, or disease progression. As these studies show, psychosocial factors must be considered in patients' treatment plans to achieve maximum health benefits. Psychologists on health care teams can rapidly assess these factors and present them to the team for consideration.

Psychologists can also assist surgical patients improve their outcomes. Tjemland, Soreide, Matre, and Malt (1999) examined preoperative psychological distress, personality characteristics, and coping style effects on the immunological status of women undergoing breast cancer surgery. The researchers found that these psychological factors impact immunological functioning which effect surgical outcome and recovery. Patients who made positive modifications in their coping styles showed improvements in their rates of recovery. In another study, Dreher (1998) examined three meta-analyses on preoperative mind-body interventions following surgery. Overall, the studies indicate that implementing behavioral interventions to improve recovery also reduce pain and psychological distress. Additionally, length of hospital stay for these patients decreased
between 1.5 and 2.4 days. Brief psychological interventions, such as relaxation techniques, provided to patients undergoing surgery can improve patients' quality of life and are cost effective by reducing length of stay. Many authors have examined the relationship between psychological and biological factors in illness and conclude that psychological processes significantly affect physical health (e.g., Anson, 1999; Christensen, Edwards, Moran, Burke, Lounsbury, & Gordon, 1999; Gureje & Simon, 1999; Hays, Wells, Sherbourne, Rogers, & Spritzer, 1995; Jencks, 1985; Kunkel, Bakker, Myers, Oyesanmi, & Gomella, 2000; Levenstein, 2000; MacNeill & Lichtenberg, 1998; Peyrot, McMurray, & Kruger, 1999; Spaulding, Jeffers, Porges, & Hatfield, 2000).

Although these studies show how treatment focusing on the whole person rather than solely on physiological illnesses improve rates of recovery and positive outcomes, tensions between the biomedical and the biopsychosocial models continue to exist (e.g., Armstrong, 1987; Fink, 1988). These tensions are primarily derived from the view of biology and the connection of the mind from a dualistic (e.g., Decartes) or monistic (e.g., Aristotle) view. This was further perpetuated when psychology was not considered to be a basic science and was excluded from medical training. However, as described earlier, it is clear that there is an interplay between psychosocial and biological factors that contribute to well-being. Professionals in the field of mental health conceptualize and treat patients utilizing the principles formulated by Engel. Many physicians in family medicine also utilize this model based on the evidence regarding its utility for assessment, diagnosis and treatment (McDaniel, Hepworth, & Doherty, 1992). The acceptance of the biopsychosocial model by family physicians provides a good avenue for psychologists to enter into the primary care arena.
Primary Care

Primary care, as defined by Bray (1996), is a form of health care service that has the following functions: (1) provides continuity of care by overseeing the patient from illness to wellness, (2) provides comprehensive care and utilizes alternative health disciplines to provide additional relevant treatments when necessary, (3) provides a coordinative function, or “one-stop” place for the person to have all health care needs met, (4) assumes a continuing responsibility on the part of the patient for follow-up care, and (5) provides personalized care. Primary care is oriented to patients’ overall health and well-being. It is prevention focused with an emphasis on care that is comprehensive and continuous. Primary care providers are likely family or internal medicine practitioners. However, they are not the sole providers of primary care services. Due to managed care influences, many health care systems have developed integrated systems of primary care to provide consumers the “one-stop” place to obtain their health care (Cummings, 1996). Integrated primary care services include a physician and other health care providers who are collaborating together to provide the most comprehensive services to patients.

The Role of Psychologists in Primary Care

Many of the leading causes of morbidity and mortality have psychosocial causes (Belar, 1996; Higgins, 1994). It is estimated that 50% of all chronic illnesses are behavior and lifestyle related (Hamberg, Elliott, & Parron, 1982). Diet, exercise, substance use, and treatment adherence (i.e., taking prescribed medications) are all related to behaviors we engage in that ultimately affect our physical well-being (Belar & Deardorff, 1995; Dunbar-Jacob & Schlenk, 1996; Kirschenbaum, 1996; Liese, Vail, &
Seaton, 1996). Psychologists can influence positive behavior changes through specific change strategy techniques (Porchaska, 1996). In fact, many complaints that patients bring in to their physicians are not even physiologically related.

Primary care physicians have been the traditional point of entry with most patients in health care. Therefore, it is worth noting that primary care physicians are also the point of entry for many people seeking medical treatment who have an underlying and undiagnosed mental illness (Boerman & Verhaak, 1999). Cummings (1996) estimates that 60% of the physical disorders that physicians treat are psychosomatic and have no biological cause. A large scale study conducted by Kroenke and Mangelsdorff (1989) examined 1,000 patients’ charts from an internal medicine clinic. They found that less than 16% of the patients’ complaints had clear physiological determinants, 10% had distinct psychiatric causes, with the remaining presenting with symptoms of an unknown origin. In fact, 80% of all patients were experiencing psychological distress. Other researchers report similar results and that the psychological problems were often overlooked by primary care physicians (e.g., Eisenberg, 1992; Katon, 1985; Horn, 1997; Von Korff & Simon, 1996; Wells, 1997). Conversely, Taylor (1990) suggests that 10% of the patients who are referred to psychologists by physicians have an actual biological basis to their illness that has not been diagnosed by the primary care physician. Others have also noted that biological symptoms may sometimes appear to be psychological in nature (e.g., Morrison, 1997). A biopsychosocial approach to primary care with collaborations between physicians and psychologists increases the efficiency of identifying the etiology of patients’ somatic complaints, to provide cost saving benefits.
In addition, Von Korff and Simon (1996) found that patients who are diagnosed with both a chronic psychological illness (i.e., depression) and a physical health problem, typically do not receive adequate care for their psychological illness. This underdiagnosis may further complicate or exacerbate their medical illness (Morrison, 1997). However, if the patient is referred to a mental health professional (as a secondary care provider), the likelihood that the patient will follow through is not strong. Callahan et al. (1994) found that up to 50% of the patients who were referred from their physicians to a psychologist did not follow through with the referral. The stigma that is often associated with mental health treatment can be daunting for some patients (Haley et al., 1998). If a physician does not explain the need or relevance for the mental health referral, the patient may feel that the physician is not competent in treating their symptoms, or worse yet, that the doctor thinks the patient is "crazy." Even if the psychologist's office is across the street, this will not necessarily facilitate a patient following through with the mental health referral (Bray & Rogers, 1995).

Consumers of health care are less willing to travel from doctor to doctor. Those health care providers who can service the diverse needs of their patients will reap financial benefits. Therefore, collaborations between physicians and psychologists are becoming more prevalent (Bray & Rogers, 1995; 1997). Whether the psychologist is located within the same office as the physician or next door in the same building, the convenience of a proximal relationship between the psychologist and the physician will benefit all involved (Haley et al., 1998).

The physical closeness of the psychologist to the physician may also determine whether the psychologist is collaborating with a physician or merely consulting (Dym &
Berman, 1986). Typically a consultation is made following a referral to a psychologist from a physician. After an initial contact, the two professionals proceed with little contact or consultation until the obligations of the referral are fulfilled (of course some consultations may require less time, even only one meeting). Another important distinction is the dualism that the referral creates. This reinforces the notion of a mind-body split when the physician refers out a patient with a "psychological" issue when a "biological" cause cannot be found.

With integrated primary health care, the physician and the psychologist work together as a collaborative team, to better serve the needs of the patient (Bray & Rogers, 1995; DeNelsky, 1996; Haley et al., 1998; LeBaron & Zeltzer, 1985). The physician will explain the physical phenomenon that the patient is experiencing to the psychologist. The psychologist will utilize this information when interviewing the patient to determine the relevant psychosocial issues regarding the somatic complaints. The psychologist will provide this feedback to the physician and the two will determine the best course of treatment that will account for both the biological and psychosocial determinants of the patient's illness.

McDaniel (1995) suggests that a psychologist who collaborates with a physician relies on "the same interpersonal skills the psychologist uses with a patient in psychotherapy: good communication, an understanding of the physician's worldview, the development of a personal relationship, a common language, shared goals, and a contract to work together" (p. 118). To negotiate this relationship, the psychologist will have to develop some knowledge of basic medicine (Belar & Deardorff, 1995; Haley et al., 1998). This will allow the psychologist to speak in a language that is familiar to the
The psychologist must become cognizant of his or her own language to avoid psychological jargon that will not facilitate communication and collaboration with the physician or the patient. Further, the psychologist will develop an understanding of how the physician conceptualizes the patients' symptoms and how this may differ from that of the psychologist's conceptualizations (Tsukuda, 1990).

Although Engel (1977) had originally envisioned physicians using the biopsychosocial model to become better equipped to treat psychosocial spheres, the idea was not widely accepted initially (e.g., Armstrong, 1987). He was asking physicians to learn and understand the concepts of systems theory, something psychologists were already familiar with (Dym & Berman, 1986). The basis of systems theory is to examine a unit through its mutually interacting parts. The results that are produced by these interacting parts are best understood by studying them in context. Utilizing the biopsychosocial model, a physician will come to understand how each interacting component can affect a patient in the context of an illness. He believed that if a physician adopts this view, the patient would benefit from holistic health care.

Perhaps Engel's view was overidealized. A general practitioner is not likely to become a psychotherapist nor is a psychologist likely to become an expert in anatomy and physiology (McDaniel, Hepworth, & Doherty, 1992). Physicians and psychologists have spent many years training for their respective professions. The additional training that would be needed for each discipline to become proficient in the other would be inefficient. However, a physician is an expert in human somatic functioning. A psychologist is an expert in human psychological functioning. A collaborative relationship between a physician and a psychologist would provide the necessary
expertise for comprehensive biopsychosocial treatment. Whereas physicians are exposed to training in mental health (American Academy of Family Physicians Commission on Health Care Services, 1995), many psychologists are less likely to be exposed to training in physical health with the exception of a course in health psychology (Belar, 1995). Psychologists who work in primary care settings are in need of training in specific areas of health care delivery that will make them more effective members of an integrated primary care team. Until recently, psychologists have received this training “on the job.”

Researchers have developed programs to train psychologists to be primary care team providers. James and Folen (1999) describe a training program developed at the Tripler Army Medical Center in Honolulu, Hawaii, in which psychology graduate student interns and post-doctoral candidates are trained to be primary care case managers. As case managers, psychologists become responsible for all facets of care for patients. They consult with physicians as needed, but mainly rely on intensive hands-on training to learn health assessments, disease roadmaps, and patient medical care; components that were not part of their psychology graduate training. They stress that the training model is not to train psychologists to become physicians, but rather train psychologists to be primary care providers. As coordinators of care, the psychologist trainees are given full hospital privileges to provide their services. In order to provide comprehensive care to patients, psychologists in primary care will need to collaborate with physicians to understand the biological components of patients’ illnesses. Reciprocally, physicians will gain an understanding of patients’ psychosocial factors that may mediate the illnesses. Working
together, the psychologist and the physician will provide patients with an optimal level of care.

In another training program, Bray and Rogers (1995) developed the Linkages Project, a training model for physicians and psychologists to facilitate professional collaborations in treatment. The project was specifically designed to develop a model of collaboration between physicians and psychologists in the treatment of patients with alcohol and substance abuse problems in rural areas. Ten pairs of physicians and psychologists from rural areas of Texas and Wyoming agreed to participate in the project. The training consisted of two one-day training sessions separated by six months. The dyads spent part of the sessions being trained together and then apart in their corresponding disciplines. A physician and a psychologist conducted the training sessions. The participants’ values and attitudes about psychosocial issues in medical care, collaborations, risks in treatment, and decision making strategies were assessed. The training included seven segments. The first segment was to provide the practitioners with an overview of substance abuse issues and a model for collaborations between professionals. The second segment focused on training issues between the professions and the cultural differences between medicine and psychology (i.e., stereotypes, language barriers, confidentiality and time constraints). How to prepare families and other caregivers for a mental health referral or consultation was the third segment. In the fourth segment, participants were given the results of their questionnaires on attitudes regarding working in collaboration. Presentation of a case study and role plays of interactions comprised the fifth and sixth training segments. Finally, the psychologists
and physicians developed strategic plans for ways to continue the development of their collaboration over the next six-month period.

The ten dyads were invited back for a second day of training six months following the initial training session. This training session focused on feedback from the first training, how their collaborations have been maintained, and specific treatment techniques for substance abuse using a stages of change model and motivational enhancement techniques. The authors found that eight of the ten dyads had implemented a plan over the six month period. One dyad did not follow through because one professional moved to another state. The other dyad who did not develop a collaboration stated that they were unable to find corresponding times to meet and establish a relationship. Although the training was provided for the treatment of substance abuse, the dyads who developed linkages increased referrals to one another not only for substance abuse issues but also for other issues such as depression, anxiety, attention deficit disorder and marital problems. The participants who developed stronger linkages (and therefore had more ongoing referrals) had regularly scheduled meetings or contacts to consult, share treatment information, and learn about the other person’s discipline. Hindrances to these collaborations included not having physical proximity (and quick access) to each other, billing issues regarding non-preferred providers and the psychologist not having full staff privileges at the hospital and therefore limiting consistent patient contact. This program demonstrates the importance of educating health care providers about the benefits of collaboration. It also indicates that the accessibility of the psychologist to the physician could potentially be the most important factor in a successful collaboration (McDaniel, 1995).
Aside from the differences in theoretical orientation, language, and treatment modalities, two other potential barriers to collaboration between psychologists and physicians are maintaining confidentiality and time restrictions (Bray & Rogers, 1995). Physicians' views of patient confidentiality are not as strict as those of psychologists. Routinely, physicians will consult with other professionals without a patient's knowledge. However, psychologists maintain confidentiality and do not discuss patient information with other professionals unless the patient gives specific consent. It is important that psychologists explain this position to the physician. The patient should also be made aware of these issues and consent to the psychologist and the physician sharing information (Haley et al., 1998). Additionally, a psychologist usually spends 50 to 60 minutes with a patient in an individual session, while a medical doctor routinely spends only 10 to 20 minutes with a patient (McDaniel, 1995). Psychologists new to primary care must acknowledge the time pressures of the physicians when collaborating and present information that is succinct and well organized to maintain the efficiency of care. Psychologists who learn to be members of integrated teams during graduate training will not be encumbered by these paradigmatic shifts in style and practice.

There are some who are skeptical about an interdisciplinary team approach (e.g., Pearson, 1983; Sands, Stafford, McClelland, 1990). There are concerns that psychologists would not be as distinguished as physician team members who would dominate the team decisions. However, others offer that psychologists have much to offer these teams and can provide valued support to physicians that will gain their trust and respect (Drotar, 1983; Mushet & Donaldson, 2000). This will foster open
communication that will further allow for balanced decisions to be made (Chase, Wright, & Ragade, 1981; Vinokur-Kaplan, 1995; Waite, Harker, & Messerman, 1994).

*Biopsychosocial Perspectives of the Primary Care Psychologist*

As psychologists enter into the primary care arena, they need to develop broad behavioral health skills and interventions (Gaus & DeLeon, 1995). Three main components of psychologists working as primary care providers were identified by the American Psychological Association Primary Care Task Force (APA, 1995). The first is that the psychologist must work in a primary care setting. This could include a medical clinic, hospital, or physicians' group practice. Second, the psychologist should have the skills necessary to work with all patients in that setting. Specifically, the psychologist must utilize broad behavioral health training to work with patients and the psychosocial components of their illnesses. This foundation of knowledge allows for consultation with other health professionals and gain pertinent information regarding the patient's care from the perspectives of other disciplines. Third, the psychologist provides comprehensive services that contribute to the patient's overall health care. As a generalist in the primary care setting, the psychologist can provide a wide range of services, not just evaluation and diagnosis. This would include treating illnesses or psychosocial issues using a brief solution-focused method which provides direct benefit to the patients, their families, and the primary care physician's practice.

Haley et al. (1998) identify eight areas that psychologists can make an impact in primary health care. The first area is what psychologists have primarily been trained in, clinical services. The psychologist may provide individual, conjoint, family, or group psychotherapy in addition to conducting assessments. Also, psychologists may be
involved with crisis intervention and referrals to other mental health professionals if issues are out of their scope of practice. Second, consultation with the patients, their families, or with medical professionals are provided. The third area is educational services. Not only can the psychologist provide psychoeducation to the patients and their families regarding their illness and care, but they can also provide educational services to other health professionals on a variety of biopsychosocial topics. Fourth, psychologists engage in research that is particularly useful for the health care organization such as patients' utilization of services, satisfaction of services, treatment outcomes research, and evaluation of disease prevalence and incidence. Psychologists reaching out into the community to expand their levels of cultural competence by forming additional collaborations with community leaders is the fifth area identified. The sixth way psychologists can impact primary care is working with the primary care team on review, growth, and modifications to the team and the services offered. Seventh, psychologists can become leaders in informing public policy and collaborate with their primary care partners to advocate for a comprehensive model of health care. Finally, Haley et al. (1998) suggest that psychologists can support the physicians they work with in primary care by providing self care seminars, support groups, and wellness events to facilitate ongoing professional development.

The biopsychosocial model is applied through these seven domains. A psychologist will assist a treatment team to develop intervention strategies with patients that include biological and psychological domains as well as sociocultural domains (which include family, friends, community and the health care system itself). A psychologist on the health care team can provide specific psychological interventions like
psychoeducation and skills training, as well as examine the interactions between each of the treatment domains (e.g., medication compliance as dispensed by a caregiver at home). The psychologist can assist staff and patients to identify realistic and measurable goals like: "What does the patient want out of treatment and how will we know when it is achieved?" A psychologist can develop a cost-benefit analysis of the treatments with quality assurance studies: "Is the effort and duration of the intervention cost efficient?" (Belar & Deardorff, 1995). Finally, psychologists can implement pre-treatment interventions by employing assessments before treatment formulation (Van Egeren & Striepe, 1998).

*Psychological Assessments in Primary Care*

Traditionally, assessments were fashioned from the medical model viewpoint. Therefore, the emphasis has been on identifying psychopathology rather than generally incorporating information about overall physical health and well-being. Similarly, many medical tests focus on a person's illness or disease and do not account for a person's psychological or emotional functioning (Belar & Deardorff, 1995). Lipowski (1967) was aware of this reductionistic approach in psychiatric assessment a few decades ago. He encouraged psychiatrists to consider a range of differential diagnoses that incorporate the whole person when conducting a consultation with primary care patients. He raised such possibilities as depressive symptoms seen with cancer (i.e., psychological presentation of organic disease), stress that leads to hypertension (i.e., somatic presentation of psychological distress), depression that follows a heart attack (i.e., psychological reaction to organic illness) and masked depression that presents as physical illness (somatic presentation of psychiatric illness).
For the psychiatrist with general medical training, ruling out differential physical illnesses likely does not pose a problem. However, for the psychologist with limited physiological training, this may present a significant challenge. This again signals a need for additional training for psychologists to work in primary care. Fewer are the numbers of medically trained psychiatrists who perform routine consultation-liaison services. As psychologists conduct more primary care consultations, their ability to conduct initial comprehensive health assessments will be essential for their perceived value on the health care team (Newman & Reed, 1996).

Psychologists can conduct comprehensive assessments that focus on the whole person and provide a wealth of information to the treatment team to guide intervention strategies. Information may be obtained from a variety of sources (Belar & Deardorff, 1995). First and foremost, simple observations of a patient can be used to examine a patient’s behaviors and how a patient interacts with the environment. Interviews, behavior monitoring diaries and questionnaires are all ways of gathering additional, yet focused, information from a patient regarding his or her current health status. Collateral information may be gathered from interviews with family and friends and from archival data such as past patient records. Finally, assessment information can be obtained through psychometric testing with broadband measures such as the Minnesota Multiphasic Personality Inventory–2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), Millon Behavioral Health Inventory (MBHI; Millon, Green, & Meagher, 1982) and the Symptom Check List–90-Revised (SCL-90-R; Derogatis, 1983) and narrow focused measures such as the Beck Depression Inventory (BDI; Beck, 1972), Mini-Mental-State Exam (MMS; Folstein, Folstein, & McHugh, 1975) and the Index of
Activities of Daily Living (ADL; Katz, Downs, Cash, & Grotz, 1970). The goal of the patient assessment is to better understand the person and to identify: (1) key factors of the personal and social environment, (2) relative physiological and psychological strengths and deficits, (3) evidence of psychopathology, (4) the etiology of the patient’s illness and his or her beliefs about it, and, (5) coping skills the patient is utilizing and if they have been effective (Belar & Deardorff, 1995). Psychologists can efficiently assess all biopsychosocial domains in detail with a combination of these assessment tools.

Most clinical psychologists are quite comfortable in gathering information from the sources mentioned to develop an assessment of a patient’s functioning. However, the role of psychological assessments in primary care settings to assist in guiding treatment formulations has recently been under much scrutiny (e.g., Eisman et al., 2000; Piotrowski, 1999; Piotrowski, Belter, & Keller, 1998). Three significant questions that have been posed are (1) whether or nor it is cost effective to spend the amount of time that it takes to provide psychological testing and assessment, (2) whether or not the assessment yields valid results, and (3) whether or not the results have utility. The misconceptions of the answers to these questions by third party payers have led to many psychologists being denied authorization to conduct such assessments (Eisman et al., 2000; Kubiszyn et al., 2000). However, support has been emerging for the continued use of psychological assessments in primary care settings.

In 1996, the American Psychological Association’s Board of Professional Affairs created the Psychological Assessment Work Group (PAWG) to examine the above mentioned questions regarding psychological assessments (Kubiszyn et al., 2000). The findings of the workgroup indicate that there has been a general decline in the amount of
psychological assessments that psychologists provide overall due to a lack of reimbursement (Piotrowski, 1999). Many managed care organizations do not support the time spent in developing a diagnosis through psychological testing and assessment when a clinical interview is believed to suffice. Nonetheless, evidence indicates that a clinical interview may have significant limitations regarding diagnostic accuracy if a patient’s insight into their distress is impaired (Eisman et al., 2000). In the primary health sector, it is generally understood that the patient referred for psychological testing has limited insight into how emotional distress is affecting physiological functioning. The testing may identify areas of strengths and deficits that illuminate factors for the patient’s illness and recovery.

Meyer et al. (2001) and Kubiszyn et al. (2000) delineate empirically validated applications of psychological assessment to achieve accurate diagnosis and develop treatment strategy development. Through meta-analysis strategies, the authors developed a list of applications which demonstrate the utility of psychological testing in health care delivery. Through the use of assessments, psychologists are able to describe clinical symptomatology and provide differential diagnosis through neuropsychological tests, self-report measures, and performance measures of personality. They are able to describe and predict functional behaviors through tests of cognitive ability, self-report personality measures, as well as independent living scales and situational tests. Psychologists are also able to predict health outcomes through patients’ self-report personality tests, performance-based personality tests, and neuropsychological and cognitive tests. Assessments can further provide information to assist with the prediction of health care utilization and psychotherapy as well as forensic and general mental health outcomes.
Finally, the research also indicates that psychologists are able to identify patient characteristics that may affect treatment.

Whereas psychological assessment has been shown to be valid and to demonstrate utility, the question regarding cost effectiveness remains unanswered. For example, given the lengthy amount of one-on-one sessions needed to administer a neuropsychological test, does the cost of the time and the results used for treatment planning save money in the long run? Initially, accurate detection and diagnosis will save both time and money that will not be spent on increased numbers of physician visits, hospitalizations and medication trials (Groth-Marnat & Edkins, 1996). Meyer et al. (2001) compared correlational data of psychological tests and what they are measuring with medical tests and what they are measuring. Results indicate that the validity indicators of psychological tests are highly comparable with the validity indicators of medical tests. One example from the information provided is the .68 correlation between neuropsychological tests and the differentiation of dementia from controls, which is the same correlational coefficient between immunoglobulin-G antiperinuclear factor scores and the detection of rheumatoid arthritis (Meyer et al., p. 143). Although considerable time may be spent in administering, scoring and interpreting psychological tests, the cost of many medical tests far exceeds the cost of the psychologist’s time to provide comparably valid and useful results relative to the test and referral question.

To illustrate the use of psychological assessment, a physician on a treatment team asks a psychologist to assess a new male patient who is quite anxious about physical symptoms for which no physiological cause can be found. The psychologist conducts a comprehensive health assessment, structured diagnostic interview and administers the
MMPI-2 to the patient. The results indicate that the patient is experiencing a high degree of anxiety and seems to be somatizing his distress. There is a positive family history of anxiety disorders and cancer. As it turns out, the man is currently the same age as his father was at the time of his death from cancer. Relaying this information to the treating physician will be important in developing a treatment plan. Evaluating the scores on the MMPI-2 can also provide useful information regarding the addiction potential of the patient if a trial of an anxiolitic medication is warranted (Stout & Cook, 1999). Having this information up front can reduce the number of unneeded doctor visits for additional costly medical tests as is frequently seen in this patient population (Baldwin, 1995). In fact, as is many times the case, the use of the psychological assessment itself might be a useful intervention (Kubiszyn et al., 2000). For this patient, to be educated on what was discovered through the assessment process may bring him an awareness of how his anxiety is being masked in somatic ways and provide him a greater sense of self-control while completing standard cancer screenings for his age and family history.

One additional issue that should be noted regarding psychological assessment is the use of screening tools. There has been a recent push by managed care organizations to utilize more screening instruments in diagnostic formulations in order to reduce the amount of time it takes for psychological assessment (Piotrowski, 1999). However, as with any psychological instrument, it is not standard to make a diagnosis solely on the results of data from one measure. Ethically, when a screen is positive, a more extensive examination of the diagnostic issue in question should be conducted (Eisman et al., 2000). Given that these are briefer measures, the risk for false positives and false negatives may increase given the reduced power (Leon et al., 1999). A temptation is to
administer screening measures routinely to large numbers of patients who would not be considered for testing otherwise. This may create potential problems for the treatment team and for the patients when there is a positive result and additional evaluation is then necessary. If the final results of the testing are negative, this could cause the patient undue stress. Therefore, screening instruments should be implemented when there is a clear and identifiable need to rapidly assess a patient and to determine if further testing is necessary (Coyne, Thompson, Palmer, Kagee, & Maunsell, 2000).

*Psychological Treatment Interventions in Primary Care*

Following patient assessment and treatment goal development, interventions are implemented. To cover all possible interventions in depth is beyond the scope of this paper. However, a brief review of general themes of treatment and illnesses treated in primary care will be addressed. Belar (1996) notes that the majority of referrals for treatment in a primary care setting deal with issues regarding coping with illness, compliance, pre-surgical screening and preparation, neuropsychological evaluation and rehabilitation and chronic pain. Belar and Deardorf (1995) observe that out of 600 referrals made to a behavioral health service within a primary care setting, half were referred by neurology, internal medicine, and family practice providers for headache management and neuropsychological evaluation. However, many other medical illnesses were additionally referred to the unit:

A significant number of other clinical problems were also seen for consultation or treatment purposes and these included such varied disorders as angina, asthma, arthritis, back pain, blepharospasm, bruxism, cancer/cancer phobia, cardiac disease, chronic obstructive pulmonary disease, compliance issues, deafness,
diabetes, fibrositis, hyperhidrosis, hypertension, intersitial cystitis, irritable bowel syndrome, multiple sclerosis, neurodermatis, penile prosthesis surgery, Raynaud's phenomenon, temporomandibular joint pain, tinnitus, and vomiting. (pp. 40-41)

Specific clinical techniques a psychologist may use in primary care are dependent upon both the patient and the setting (Resnick & Rozensky, 1996). Through collaboration with the physician, an individualized treatment plan can be developed (McDaniel, Hepworth, & Doherty, 1992). Aside from traditional psychotherapeutic techniques, health psychologists employ behavioral methods such as relaxation training (guided imagery, deep breathing, progressive muscle relaxation) and biofeedback to educate patients on mind-body awareness and psychophysiologic regulation (Belar & Deardorff, 1995). Empirically validated treatments have been gaining prominence due to increasing pressure to show short-term effectiveness from managed care organizations (Johnstone et al., 1995). Because of this, research is ongoing to indicate the effectiveness of psychologists in health care settings and to determine if the services that psychologists offer reduce the number of total health care utilizations.

Many of the treatments that are utilized in clinical health or behavioral health practice are cognitive-behavioral in nature (Belar & Deardorff, 1995; Comic & Knight, 1998; Resnick & Rozensky, 1996). Cognitive-behavioral therapy is a problem focused, time limited, and structured approach that teaches patients to modify maladaptive thoughts that have had negative consequences on affect and behavior (Beck, Rush, Shaw, & Emery, 1979). The goal is that the patient will develop a new repertoire of alternative coping strategies to successfully manage varying situations. Therefore, it is no surprise that many empirically validated and manualized psychotherapy treatments are based on
cognitive-behavioral foundations (Scaturo, 2001). Although these manuals are valued by
managed care organizations (for specifying X number of therapy sessions to treat X
disorder) and they provide a common therapy approach to treat specific disorders, they
are still not sufficient. Other variables continue to contribute to successful therapeutic
outcomes. Lambert (1992) found that approximately 30% of the variance attributed to
patient outcomes is related to the patient-therapist relationship. Therefore, primary care
clinicians should not only be skilled on specific therapeutic techniques, but should also be
trained in developing rapport and making a connection with their patients.

_Efficacy and Cost Efficiency of Psychologists in Primary Care_

Although research has demonstrated the effectiveness of several psychological
therapies for medical conditions, managed care organizations are reluctant to reimburse
for psychological services unless there is a primary psychiatric diagnosis (Camic &
Knight, 1998). Further, many health care organizations will not reimburse psychological
treatments that provide health promotion benefits (e.g., smoking cessation, weight
management, and stress reduction training) that reduces the overall health care utilization
for a person throughout his or her lifetime. Integrated services would eliminate the need
for secondary or tertiary referrals because all patient services could be provided in one
setting. This would also include instances when short-term psychotherapy is deemed
appropriate for patients who are amenable to it for their comprehensive treatment.

Cummings (1977) performed a large-scale study for Kaiser Permanente in which
he evaluated the use of psychotherapy in medical care. The results of the study indicated
that on-site therapy reduced the number of visits the patients made to their physicians and
increased overall health satisfaction ratings. Results of this and other studies (e.g.,
Mumford, Schlesinger, Glass, Patrick & Cuerdon, 1984; Pallak, Cummings, Dorken, & Henke, 1993; Yates, 1984) suggest the cost efficiency of employing clinical health psychologists in primary health care. Additional studies have shown that when physicians do not appropriately identify patients in need of mental health services (i.e., treatment of depression), there is an unnecessary increase in the use of primary care physicians (Bloch, 1988; Johnson, Weissman, & Klerman, 1992).

As mentioned previously, researchers continue to study methods of providing psychological treatment and evaluate them for their efficacy (e.g., Chambless & Hollon, 1998; Kendall, 1998; Jenkinson, 1995). Treatments that have been shown to have reasonable effectiveness for various biopsychosocial problems are too numerous to cover in the present review. The research seems to be driven not only to ensure psychology’s place in the health care community, but also to provide data requested by managed care organizations in their evaluations of optimal cost effective measures for health care (O’Connor, Solberg, & Baird, 1998). Some researchers (e.g., Belden, Baukmann, & Wolf, 1985) dispute psychology’s effectiveness in the medical setting by noting methodological limitations in the empirical evidence gathered to date. Yet, psychologists continue to be the primary researchers in this area and continue to examine these and other issues regarding psychology and health care practices (APA, 1995).

An additional area worth noting is a debate on the cost effectiveness of treatment by psychiatrists alone rather than in conjunction with psychologists. Dewan (1999) examined fee schedules of seven large managed care organizations and the costs of services provided by psychiatrists and psychologists. He concluded that psychiatrists alone are more cost effective when psychotropic medication is prescribed for a patient
versus a split treatment between a psychologist and a medical doctor. He comments that psychiatrists can provide the psychotherapy and the prescription under one billing service. However, this is not the general practice of psychiatry today, nor is it the forecasted direction of psychiatry. Many psychiatrists spend a limited time (generally 20 minutes) with patients for assessment and medication therapy (Weissman, 1996). Although a split treatment approach may seem more costly, the reduction in the use of medical services will be more cost-efficient overall (Johnson, Weissman, & Klerman, 1992). Recent trends in legislation may further change the way psychologists and physicians work together.

In March of 2002, legislation was passed in the state of New Mexico allowing properly trained psychologists the authority to prescribe medications (APA, 2002). This is an effort to provide needed medication services to the largely underserved mentally ill populations throughout the state. Similar legislation has been introduced in many states around the nation. Proponents for the new scope of practice say that psychologists will be able to truly provide comprehensive mental health services to the patients they serve. Advocates are concerned that psychologists will then become responsible for identifying and treating all physical illnesses (Klusman, 2001). The Department of Defense Psychopharmacology Demonstration Project (PDP) trained ten military psychologists to be prescribers of medication (Sammons & Brown, 1997). Results of the project indicate that these psychologists continue to provide competent pharmacotherapy to their patients without formal medical school training (Newman, Phelps, Sammons, Dunivin, & Cullen, 2000). In fact, others have noted that even psychiatrists query the utility of their medical school training in their daily practice (Brady, 1978). Klusman (2001) suggests that if
psychologists are to become comprehensive mental health providers and prescribers of medications, then additional training will be necessary in the areas of pharmacotherapeutics and pathophysiology. The implications of cost savings would be great due to the fact that additional referrals to a physician would likely be eliminated if the treating psychologist were able to prescribe necessary medications to their patients. This suggests that psychologists having the ability to offer this additional intervention would be highly valued by the managed care organizations.

The Impact of Managed Care

Before 1920, an individual was responsible for paying for his or her health care (VandenBos, Cummings, & DeLeon, 1992). However, if a person could not afford this care, he or she was likely to find charity care. After World War II, employers began to pay for health insurance benefits because it became a tax exemption for businesses. According to Newman and Reed (1996), by 1960, nearly 70% of the population was covered by a form of health insurance. As discussed earlier, mental health policies began to take shape with the introduction of the National Institute of Mental Health (NIMH) in the 1940’s (Matarazzo, 1994). Later, the issue of mental health would become more prominent with the passage of the Community Mental Health Centers Act of 1963 (Newman & Reed, 1996). This provided American’s with available mental health care through a system of mental health centers established throughout the United States. This was dismantled in 1981 by the passage of the Omnibus Budget Reconciliation Act. This legislation relinquished federal responsibility for providing such mental health services. However, in 1965, mental health was included in both Medicare and Medicaid legislation. These measures were to extend accessible care to the percentage of the
population who did not have the resources to be eligible for private insurance. This legislation also provided a necessary precedent for psychology to gain reimbursement from private insurance companies.

With increasing availability of health care, health care spending rose from $27.1 billion in 1960 to $650 billion in 1990 (Newman & Reed, 1996). The United States was spending more on health care than any other country in the world, even though our health care covers a small proportion of the population. The suggested reason why the costs began to rise so quickly was that consumers and providers were able to choose whatever treatment they wanted and the insurance company would reimburse for these treatments. There was no reason for the health care industry to cut costs. In fact, the preferred method of treatment was usually expensive inpatient hospital procedures. A piece of legislation, the Health Maintenance Organization (HMO) Act of 1973, changed this.

When the HMO legislation was written, mental health was included as outpatient services, crisis intervention, and alcohol and substance abuse treatment services. Although HMOs were being developed throughout the 1970’s and 1980’s, it was not until the 1990’s that the structure of the HMOs changed to tackle the rising costs of health care (DeLeon, VandenBos, & Bulatao, 1991). Included in this legislation was the permission for profit driven companies to manage the HMOs. However, during the 1980’s there was a significant increase in mental health care expenditures. This was largely due to reduced stigmatism of mental health promoted by the media, specialty mental health services, and expensive chemical dependency programs (Newman & Reed, 1996). In order to control the high costs of health care, HMOs began to eliminate existing services. As a consequence, access to mental health care became severely limited.
Eventually, employers began offering “carve-out” plans to their employees. These plans were provided as separate entities from an employee’s regular insurance plan (Cummings, 1996). Employers were able to offer extra health care services, such as mental health, for an additional cost. As the numbers for carve-out plans continue to grow, a newer cost containment health system has been gaining popularity.

The Kaiser Permanente health care system is one of the oldest HMO’s in America (Belar, 1995). However, it is also recognized as one of the most successful physician equity models (Cummings, 1996). In this system, the physicians are owners of the health care organization and therefore have a voice in how services are to be delivered. This model continues to gain support through proposed legislation such as the previously proposed Rodham-Clinton health care legislation. Under this measure, employer groups would be able to form a consortium that would enable them to purchase a health provider plan from a managed care organization or an independent provider group (i.e., group practice of physicians), depending which offers services at the lowest cost. This enables physician groups to directly compete with HMOs for consumers’ business. This additionally adds pressure to HMOs to provide quality services at reasonable costs.

As psychologists continue to gain a foothold in primary health care, they will participate in this competition. Organizations, such as the Mullikin Group, are extending the physician equity model to other health care providers (De Lafuente, 1993). This provides an opportunity for psychologists to buy into a partnership of a comprehensive group practice; one that truly focuses on the biopsychosocial aspects of health care. Such a group practice would be able to provide primary medical care services and primary
mental health care services. Patients would additionally benefit from the availability of consulting services from either the medical or mental health disciplines.

*Psychologists as Health Professionals*

In 1998, the APA published a report that described the roles of psychologists in primary care settings and the future direction of training for these new health professionals. In what may have been a direct response to managed care’s questions regarding psychology as a primary care profession, the authors of the report elaborate on three points that managed and primary care should recognize about psychology (APA, 1998).

The first factor for consideration is the recognition of psychology as a health profession. In defining the roles of psychologists in the health care setting, it is stated that psychologists have a long tradition of being linked to the medical field and should not be viewed solely as a mental health profession, but as a broader health profession. However, psychologists are cautioned in aspiring to be “specialists” in the behavioral health care field. As this field continues to broaden, so do the areas in which psychologists are needed. If psychologists focus on one particular area of illness or treatment (i.e., cardiac; biofeedback), they may potentially restrict themselves from providing input to a larger system of care (Johnstone et al., 1995).

At this point, it is necessary to distinguish between the work of a health psychologist, a rehabilitation psychologist, and a neuropsychologist. All three are mental health professionals in medical settings, but their training and emphases are somewhat different. As previously mentioned, the role of the health psychologist is described broadly as one who promotes and maintains health, prevents and treats illness, and
identifies etiologic and diagnostic correlates of wellness and illness (Matarazzo, 1980, p. 815). A rehabilitation psychologist is one who applies psychological theory and techniques to all aspects of physical disability using systems and biopsychosocial perspectives (Grzesiak, 1979). A neuropsychologist is one who applies science in identifying, assessing, and treating the behavioral correlates of brain dysfunction (Lezak, 1995, p. 7). Therefore, this discussion pertains to the health psychologist who works in a variety of health care settings. It is not uncommon for a health psychologist to perform tasks that may be similar to those of a rehabilitation psychologist or a neuropsychologist. Some believe that the generalist training of a health psychologist would make these functions out of their scope of practice (Chelune, 1993). However, when systems lack appropriate funding or connections with other specialists (in more rural settings as an example), a clinical health psychologist must be equipped with broad training to provide psychological services in a variety of capacities. However, obtaining external supervision and continuing educational opportunities will likely be necessary for ethical and competent practice in some instances (Belar & Deardorff, 1995).

The second factor defined by the APA is that psychology is an important component to interdisciplinary teams in primary care settings. Although psychologists have been providing services in medical settings in the past (i.e., referred consultations), there is a definite need for behavioral health components in the current medical system. Physicians educated and exposed to psychosocial treatments of illnesses have been impressed with outcomes and have been more likely to utilize psychological services again (Pruitt, Klapow, Epping-Jordan, & Dresselhaus, 1998; Ross & Hardy, 1999; Schenkenberg, Peterson, Wood, & DaBell, 1981). This suggests that psychologists need
to be prepared to demonstrate their effectiveness and utility to interdisciplinary teams through outcomes data and program evaluation (Belar & Deardorff, 1995).

The third issue is the need for primary care training. Psychologists should be trained at all levels of education to prepare for a role as a primary care provider. Through graduate courses on behavioral health interventions and practicum experiences in primary care settings, students of psychology will develop an identity as health care providers. Unfortunately, the current training model for psychologists does not support this view. Few graduate departments in psychology offer these opportunities to their students (Belar, 1996), though it is believed that these components will further foster the relationship between psychology and the medical disciplines. It will further provide psychology doctoral students the necessary grounding in the biopsychosocial model for practice as a contemporary psychologist.
The Need for Standardized Training

As suggested by the APA workgroup (APA, 1998), there is a strong need for health psychologists to be trained as primary care team providers at the beginning of their training. The workgroup identified 43 programs with a concentration in health psychology in 1998, yet, very few offered specific training in primary care even though training in primary care would help facilitate psychologists’ roles in health care settings in general. Instead, health psychologists are generally trained via the scientist-practitioner model. Corrie and Callahan (2000) conclude that the scientist-practitioner model has produced students with the research skills necessary to develop validated treatments. Dawes (1994), however, has argued that this model has not effectively produced psychologists who develop validated treatments but instead psychologists who continue to use models of therapy that have not demonstrated good clinical outcomes.

Many of the current programs in health psychology emphasize research-based careers. What is therefore needed are graduate programs that train psychologists to be practitioners in primary care who can apply research findings to practice as with the Psy.D. in clinical psychology. Thus, this systematic review recommends that the clinical health psychology degree should follow a Psy.D. format where clinical practice in health care settings is the primary focus and research abilities to inform clinical practice is a secondary focus.

Some in the field are concerned about the educational backgrounds of current health psychologists (e.g., DeLeon, 2000; Johnstone et al., 1995). Large professional schools of psychology attract students by offering “tracks” in health psychology. They advertise that they may develop lucrative careers working in health care settings.
However, some of these professional programs, which lack APA accreditation, provide questionable training and do not equip students with adequate skills for health care settings (Johnstone et al., 1995). Another concern is that some psychologists attend continuing education seminars (comprised of several hours to several days of limited training) in health psychology areas and then promote themselves as health psychologists. Some recommend that all health psychologists should be able to document their proficiency in health psychology by becoming certified by the American Board of Professional Psychology (ABPP) just as a medical doctor would denote a specialty by being certified by the American Medical Board of Medical Specialties (Johnstone et al., 1995, p. 361).

These concerns and recommendations lead to the ultimate question of how one determines what is proper training for a clinical health psychologist? Psychologists have worked in health care settings for many years but have struggled to become primary care providers. Historically, these psychologists have provided specialized services to specific patient populations in secondary or tertiary care settings. The literature is robust in the area of cardiology where psychologists have provided research and interventions with regard to cognitive adaptations with coronary events (e.g., Christensen, Edwards, Moran, Burke, Lounsby, & Gordon, 1999; Helgeson & Fritz, 1999; Holahan, Moos, Holahan, & Brennan, 1996; Spaulding, Jeffers, Porges, & Hatfield, 2000; Taylor, Miller, & Smith, 1996), quality of life issues (e.g., Fair & Haskell, 1996; Squier & Kaplan, 1996), and outcomes assessments (e.g., McGee, Hevey, & Horgan, 1999; Murberg, Bru, Svebak, Tveteras, & Aarsland, 1999). Effective interventions by health psychologists have also been documented for patients with HIV and AIDS (Nelson, 1998), cancer (Anderson,
1992; Golden, Gersh, & Robbins; Meyer & Mark, 1995), irritable bowel syndrome (Blanchard & Malamood, 1996), and urinary and fecal incontinence (Whitehead & Drossman, 1996), to name a few. However, it must be noted that much of the research and practice of health psychologists in these settings are either in university-based facilities or large urban hospitals where funding and research abound. The health psychologist working in an integrated primary care setting is faced with the task of being a generalist with the ability to offer specific clinical services to many diverse patient populations and to integrate with medical professionals (Haley et al., 1998; Resnick & Rozensky, 1996). The training to date does not address these needs.

As discussed previously, primary care psychologists may provide services that are not unlike those of traditional clinical psychologists (Haley et al., 1998). However, given the health care setting, they may also provide rapid neuropsychological assessments (Johnstone, 1995), design strategies for rehabilitation in coordination with other treatment providers (Klapow, Pruitt, & Epping-Jordon, 1997), monitor medical treatment compliance (Resnick & Rozensky, 1996), provide consultation to patients and physicians on a number of physical illnesses (Belar & Deardorff, 1995) and possibly even prescribe medications (Klusman, 2001). Additionally, specific age and cultural factors should be considered. As the population continues to age and the average lifespan of an adult continues to grow, older adult issues in primary care settings must be considered (Whitbourne, 1996). Geriatric patients are frequent visitors of primary care offices and psychologists could add an additional component to such visits. For example, physicians do not routinely screen older adult patients for depression even though they have the highest rates of suicide (Conwell & Brent, 1995). Psychologists in primary care can
provide physicians with additional consultative services for older adults as well as share knowledge on issues concerning ethnic, cultural, and gender differences. Training in these areas should be provided to psychologists during their graduate education.

To ensure consumers of health care services and other service providers that a health psychologist has been adequately trained to provide services, two things can occur: 1) health psychologists would be mandated to obtain specialist certifications through the American Board of Professional Psychology (ABPP), or 2) health psychologists would be trained following a standardized curriculum that covers all of the major facets of providing psychological services in the context of a primary care setting. Although certification by the ABPP is highly valued and may likely be necessitated by health care organizations for reimbursement, many students are not made aware of the necessary training requirements during their graduate education. Unaware of these requirements, students may not obtain certain experiences that may later hinder their achievement of future ABPP certification. By creating a standardized curriculum, students will be guided through a process to become a primary care health psychologist who could likely achieve board certification (Johnstone et al., 1995). In addition, other health care professionals who are made aware of this standardized course work and external training would have a better understanding of the services that a clinical health psychologist can provide in a primary health care setting (Bray & Rogers, 1997).

In presenting a curriculum for primary care psychologists, it should be briefly noted that the field of American psychology has yet to formally adopt a core curriculum for the discipline (Benjamin, 2001). In fact, the field itself has been struggling with its lack of unity and identity issues since its conception (Sternberg & Grigorenko, 2001).
Thus, a legitimate question may be asked: Why present a standard curriculum for primary care before a core curriculum has been established for American psychology? The answer, which has plagued the field for many years, is "legitimacy." Many in the health care field have difficulty with the various training models and differences in the quality and quantity of training between institutions that offer the same degree (Johnstone, 1995). Therefore, in order for psychologists to be fully accepted into the primary care arena, it is necessary to develop a standard curriculum of training that others in the health care field can acknowledge as meeting certain standards that they will accept between practitioners. Although the field of psychology has not agreed on a standard curriculum, the APA Committee on Accreditation (the accrediting body of the field) has agreed on necessary core components of graduate level training.

Before a standardized curriculum of primary care training will be accepted within the professional community, it will need approval from the APA Committee on Accreditation. Current guidelines and principles for doctoral education in psychology leading to entry level practice, as prescribed by the Committee on Accreditation, do not include clinical health psychology as a substantive area of professional psychology. Substantive areas are defined as "comprehensively recognized and delineated" domains of knowledge (APA, 1996). The current "traditional" substantive professional areas are clinical, counseling, and school psychology. Although the Committee does make a provision for accepting applications for accreditation from institutions that present programs in "emerging substantive areas of professional psychology," these programs must be built on substantive foundations. The committee makes a clarification regarding the term "specialty." They view specialty areas as unique from substantive areas and that
programs that focus on specialization should be at the postdoctoral level. For an area to move from a specialty area to a substantive area, the domain must receive a broad endorsement from the professional community. This is generally accomplished by various groups such as the Council of Specialties, Board of Educational Affairs, Commission on Education and Training Leading to Licensure, and the American Board of Professional Psychology designating a domain as a substantive area worthy of a professional degree in psychology. Until this occurs, clinical health psychology or behavioral health degrees are considered specialty tracks under the clinical domain. The curriculum presented here is an effort to develop a substantive primary care curriculum built from a traditional substantive clinical curriculum.
Components of a Primary Care Curriculum

The APA Committee on Accreditation delineates core curriculum domains that establish basic competencies psychologists should acquire in their pursuit for a professional degree (APA, 1996). These areas will be used to form the foundation of the primary care curriculum. To begin, a brief description of how the Committee on Accreditation has organized the four curriculum domains and the coursework found in each will be presented. Following this overview, a primary care curriculum will be presented with modifications to the Committee’s initial core design. The Committee does not ascribe set curricula for all clinical programs; rather they encourage programs to develop their own philosophies, missions, and goals. Curricula should be consistent with the overall plan for educating psychologists from each program’s unique perspective.

It should become apparent when looking at the proposed curriculum list (see Appendix) that courses designed specifically for the primary care curriculum have been integrated with the core curriculum courses. This is believed to be indicative of a substantive area rather than a specialty track. Core clinical courses should also incorporate behavioral health or primary care issues. Faculty in programs that offer this curriculum should be multidisciplinary with backgrounds in psychology and the medical field. Because of the substantial curriculum requirements, students will find that there are fewer choices for elective courses as would be found in other clinical degree programs. As seen in the Appendix, courses are listed by their domains and numbers of units are expressed as within quarter units. The total number of units in the proposed curriculum is 176 quarter units. It is estimated that this curriculum could be completed in five years, which is one more year than a traditional Psy.D. degree program.
Based on what has been previously addressed regarding psychologists working in primary care settings, it is suggested that there should be a strong biopsychosocial emphasis in programs offering a primary care degree (Belar & Deardorff, 1995). However, for this degree program to be substantive, it must also reflect the classic foundations of clinical psychology. Therefore, inclusion of four curriculum domains will be proposed to comprehensively train primary care clinical psychologists. As the domains are presented, this author will comment on how these curriculum standards have been modified for the primary care curriculum. Although some modifications have been made simply for ease of understanding and a better sense of flow among domains, the core content domains remain intact. Because many of these domains and courses are similar throughout APA accredited clinical psychology programs in the United States, the focus of this section will be in examining the specific courses that are deemed necessary for a primary care curriculum in clinical health psychology. Due to the lack of standard curricula across programs (Benjamin, 2001), and his familiarity with the program, this author is utilizing the training curricula from Loma Linda University in California as a framework. Therefore, some names of courses and domain descriptions reflect similar terminology set forth by Loma Linda University’s Department of Psychology (Loma Linda University, 2002).

The core domains include psychological sciences, theoretical applications, clinical practice, and individual differences (APA, 1996). The first domain identified by the APA Committee on Accreditation is that of the science of psychology; this includes psychology’s history, research methods, and scientific applications. This section has been divided into two sections for the primary care curriculum: Psychological Science
Foundations and Research Foundations. It is believed that this division reflects a better distinction between the subdisciplines of psychology and the principles of research methods. The psychological science courses include “classic” foundational subjects of History and Systems of Psychology, Foundations of Learning and Behavior, Cognitive Basis of Behavior, Social Basis of Behavior, and Psychobiological Foundations. Foundations of Health Psychology has been added to this domain to introduce the biopsychosocial model to students and provide an overview of work to come. These courses are necessary for the clinical practice of psychology because they provide the theoretical underpinnings of modern psychological science (APA, 1996). Research methods courses include statistical and data analysis courses (listed as Statistics I and Statistics II in the Appendix, Methodology and Research Design, and Principles of Psychological Measurement). A course in Program Evaluation is added for students to learn how to evaluate patient progress and study the effectiveness of a treatment program. These courses teach students basic skills to conduct research in health care settings and to develop methods of evaluating services provided (APA, 1996).

The second domain identified is the scientific, methodological, and theoretical foundations of practice. This includes courses on individual differences in behavior, developmental psychology, psychopathology, and professional standards and ethics. A number of modifications have been made to this domain. It has been renamed Clinical Psychology Foundations and will be described more fully below as it relates to the integration of clinical practice and general medical care. However, two modifications to this domain can be briefly mentioned here. First, the course on developmental psychology, named Human Developmental Basis of Behavior, has been moved to the
Psychological Science Foundations domain as it is viewed to be a subdiscipline of general psychology. Developmental areas in this domain are maintained by including courses in psychopathology seen throughout the life span. Second, a separate domain named Cultural and Individual Differences has been created to include components of individual differences in behavior and components of the fourth domain to be discussed below. This domain includes coursework on ethnic, cultural, spiritual, and gender issues. These courses are believed to reflect the psychosocial aspects of the biopsychosocial model as they contribute to whole person understanding. They are also required components for the substantive foundations for APA accreditation. The courses that remain in the Clinical Psychology Foundations will be discussed further below.

The third domain includes psychological assessment and diagnostic techniques as well as treatment interventions. This domain has also been divided into Psychological Assessment and Psychological Interventions. The Psychological Assessment domain includes APA required, and relevant, coursework for students to acquire skills necessary to provide integrative intellectual, functional, personality, and neuropsychological assessments. The Psychological Interventions domain includes additional coursework on therapy as well as treatment models specific to general medical settings as well as required courses for clinical licensure. This domain will also be discussed more fully below.

Finally, the fourth domain identified by the Committee on Accreditation as a core domain for educating psychologists are courses that cover cultural and individual differences. As mentioned previously, this domain has been named Cultural and Individual Differences and includes courses on ethnic, cultural, spiritual, and gender
issues. In addition to these four domains of coursework, additional graduate student work is completed through doctoral research leading to a scientifically based doctoral project and clinical experiences of practicum and pre-doctoral internship.

Outlined in this curriculum are separate clinical experiences consisting of Pre-Practicum, Clinical Practicum, and Pre-Doctoral Internship. Traditional clinical practicum placements have occurred as a part-time rotation at a mental health facility. However, advocates of primary care training suggest that clinical “clerkships” be offered to clinical health psychology students (James & Folen, 1999; Johnstone et al., 1995). These would consist of multiple site rotations that occur over the course of the students’ education and begin early in their training. This allows them to become accustomed to being in novel situations typically found in medical settings. As with medical residents in medical clerkships, psychology students would quickly learn to apply a flexible problem-solving approach, while developing a greater tolerance for ambiguity. It is suggested that primary care psychology students be placed in medical settings where they are able to train with physician residents and treat patients in training clinics or hospitals. Therefore, psychology students and medical students will gain a better appreciation for each others’ disciplines as they develop into independent practicing health professionals (Bray & Rogers, 1995; James & Foley, 1999).

Pre-doctoral internships in primary care should continue to focus on biopsychosocial applications of psychological interventions in medical settings. Provided that legislation for prescriptive privileges continues to be approved for psychologists, the internship placement may provide students the initial opportunity to utilize their training in psychopharmacology and prescribe psychotropic medications under the supervision of
a physician (APA, 2002). The pre-doctoral internship experience will provide future clinicians with broad-based clinical training in medical settings while allowing them to explore potential specialty areas.

There have been some modifications in order to translate APA’s four domains into six for the present curriculum to enhance the integration of the scientific knowledge of psychology and the necessary components of medicine and health care foundations. To this end, two additional domains were added for the primary care curriculum. These are *Medical Science Foundations* and *Behavioral Health Systems*. Courses in these domains will include necessary information for students to understand medical diagnostics and treatments as well as the health care systems in which they work. These domains will be described more fully below as well as the other significant modifications to the core domains as mentioned above. The domains to be addressed specifically are *Clinical Psychology Foundations, Psychological Interventions, Medical Science Foundations,* and *Behavioral Health Systems.*

**Clinical Psychology Foundations**

This domain provides psychology students with the core coursework of clinical health psychology and ethical issues (APA, 1996; Belar & Deardorff, 1995). Courses include *Introduction to Clinical Psychology, Ethics and Law in Psychology, Adult Psychopathology, Developmental Disorders and Child Psychopathology, Geriatric Psychology, Rehabilitation Psychology, Introduction to Cognitive-Behavioral Therapy,* and a therapy course elective. It is suggested that cognitive-behavioral therapy is the therapy model most utilized by primary care clinicians (Barlow, 1994; Resnick & Rozensky, 1996; Strosahl, 1996). However, because primary care students also need
skills in developing a rapid rapport with patients (Lambert, 1992), an additional therapy model should be included which is known to foster a bond between client and therapist (e.g., Perls, Hefferline, & Goodman, 1994; Klerman, Weissman, Rounsaville, & Chevron, 1984; Levinson, 1998). Students are provided a choice in learning an additional therapy model to complement their individual styles in clinical work. As listed in the Appendix, therapy model elective courses in Gestalt Therapy, Interpersonal Psychotherapy, and Short-Term Dynamic Psychotherapy are offered.

Ethics as well as adult and child psychopathology courses are recommended from APA’s Committee on Accreditation standards (APA, 1996). With regard to geriatrics, older adults will generally present psychological symptoms to their physicians first (Park, 1996). Therefore, it is important for a psychologist to understand the differences of how psychopathology presents in older adults as opposed to younger adults. They also present with a number of neuropsychological conundrums to primary care physicians given the high prevalence rate of dementias and cerebrovascular accidents in older age groups. Therefore, because psychologists are specialists in regard to the brain and its affect on behavior, neuropsychology and rehabilitation training are also considered to be foundational for psychologists working in primary care (Johnstone et al., 1995).

Psychological Interventions

This domain includes treatment courses designed to further primary care students’ knowledge of available treatments for various disorders and conditions that may be seen in primary care practice. An advanced course on the application of Cognitive-Behavioral Therapy is offered as well as coursework on group psychotherapy. The advanced course on cognitive-behavioral therapy will provide additional training and practice with regards
to illnesses and disorders seen in primary care settings. Group psychotherapy has been shown to be a cost-effective ancillary treatment for a number of physical health disorders such as cancer (Spira, 1997), chronic pain (Keefe, Beaupré & Gil, 1996), and AIDS (Belar & Deardorff, 1995).

Additional courses in this domain include *Family and Marital Therapy, Human Sexual Behavior and Therapy, Treatment of Abuse and Sexual Trauma, Treatment of Addictions, Health Behavior Change, Assessment and Treatment of Chronic Pain*, and *Principles of Biofeedback*. Not only do these courses relate to the prevalence of specific clinical issues that are seen in primary care settings (Belar, 1996; Belar & Deardorff, 1995; Liese, Vail, & Seaton, 1996), but they additionally reflect psychosocial domains of the biopsychosocial model. Addiction and abuse treatment are also necessary for many state clinical licensure requirements. Issues with regard to sexual dysfunction are not uncommon in primary care practices. Therefore, students are provided with skills for diagnosis and sensitive treatment of these disorders in collaboration with the primary care team. Finally, many individual issues that are seen in primary care settings also have familial components, as was seen in the case presented earlier (Engel, 1980). Therefore, students should also be provided with a basic foundation for family and conjoint therapy, as patients’ family members are likely be an instrumental part of the treatment team.

The behavior change course is influenced by the knowledge that many causes of disease are lifestyle and behavior related (Hamberg, Elliott, & Parron, 1982). Therefore, it is necessary to teach students change strategy techniques and train them in preventative treatments (i.e., smoking cessation) that would reduce patients’ lifetime health care utilization (Haley et al., 1998; Liese, Vail, & Seaton, 1996; Porchaska, 1996). The next
two courses are in pain management and in bodily awareness and control. Patients seeking treatment for chronic pain frequent primary care settings. Treatment courses that focus on methods of pain management such as cognitive-behavioral techniques, relaxation training, and biofeedback have been shown to help patients manage pain and gain better control over their physical response system (Arena & Blanchard, 1996; Hardin, 1998; Keefe, Beaupré & Gil, 1996). This domain of courses is designed to further socialize future clinical health psychologists to health care systems to help integrate psychological services within traditional medical services.

**Medical Science Foundations**

This domain introduces students to the science of medicine and provides basic coursework in understanding medical practice. An *Introduction to Medicine* course has been traditionally reserved for medical students. However, psychology students taking this course with medical students begins to break down barriers of a mind/body dualism by exposing medical and psychology students to each others’ disciplines (DeNelsky, 1996). The course provides relevant information to psychology students about the practice of medicine including ideals of patient care, physical assessments, and problem-based learning for the physician. Other relevant courses include *Anatomy and Physiology, Neuroscience, Epidemiology, Physiopathology, Pharmacology, and Clinical Pharmacotherapeutics*. These provide future clinicians the necessary and basic understanding of assessing, diagnosing, and treating physical illness (Belar & Deardorff, 1995; Klusman, 2001). They also begin to provide the psychologist in training with the lexicon of the health care setting, which will foster the communication between psychologists and physicians (Haley et al., 1998). Additionally, these courses include the
recommended curriculum courses for psychopharmacology training adopted by the APA Council of Representatives in 1996 (APA, 2000). Considering recent legislative approvals by states allowing psychologists to prescribe psychotropic medications, these courses, along with clinical experiences, will prepare students to one day become comprehensive providers with the ability to prescribe medications (APA, 2002). Training through practicum, internship, and post-doctoral residency will allow students to apply the knowledge gained from the courses and the practice within primary care while working collaboratively with other health care providers (Bray, 1996).

Behavioral Health Systems

Courses in this domain are designed to provide students with further knowledge that will assist them in navigating health care (Belar, 1996; Belar & Deardorff, 1995; McDaniel, 1995). These courses are Medical Terminology, Health Policy, Health Care Administration, and Consultation-Liaison Services. These courses will continue to immerse students in the language of health care settings. The medical terminology course will assist students in developing proper medical charting procedures as well as add to their medical lexicon. The health policy and health care administration courses will provide students with an understanding of history and politics of health care organizations and the organizational systems within medical settings (Belar & Deardorff, 1995). The course on consultation-liaison services additionally provides students with an understanding of the interface of psychologists with patients and other health care providers (Belar & Deardorff, 1995; Johnstone et al., 1995; Haley et al., 1998; Pruitt et al., 1998).
Conclusion

Psychology has much to offer in the delivery of primary care. For the field of clinical psychology to survive this present era of managed care, clinicians will need to become comfortable in identifying themselves as health care providers. They are no longer solely providers of mental health services, but rather are providers of the broader levels of general health care services. Mental health issues have been identified as a public health issue, which has caused a paradigmatic shift in health care delivery. Psychologists have successfully provided comprehensive services at secondary and tertiary levels of care. They have made a favorable impression on the interdisciplinary service teams on which they work by demonstrating effectiveness and efficiency. Now is the time for psychologists to continue their move into the primary care arena.

The biopsychosocial model has been identified as a model to supplant the biomedical model of disease for the practice of health care delivery. Through clinical processes such as assessment, diagnosis, and treatment, psychologists can provide integrated primary care teams with knowledge of how psychosocial factors may influence physiological health and well-being. In the near future, they may also provide medication services as their scope expands to psychopharmacology. This would further the cause of psychologists becoming primary care providers who deal with whole person issues.

An important issue that was not addressed in this paper is the impact on other mental health professionals' roles as psychologists develop more prominent roles on primary care teams. It is not believed that the work of psychiatrists and psychiatric nurses would be eliminated with the inclusion of a psychologist. However, as
psychologists gain prescriptive authority, it is believed that the traditional roles of psychiatric medical staff will be altered somewhat. The roles these other professionals will have in primary care service is the subject for a future discussion in this area. For now, psychologists have been striving to gain sufficient knowledge of medical care to offer additional services in the primary care sector.

Psychologists have previously been receiving the majority of their clinical health care training on the job. Suggested here is a standardized graduate training curriculum that incorporates guidelines from the APA Council on Accreditation as well suggestions from experts in the field who are intimately aware of the issues psychologists face in primary care. It is believed that this curriculum would prepare psychologists to achieve board certification in a specialty of psychology. As specialists in the field, they would provide the training opportunities for future generations of primary care psychologists. Psychology will soon be reunited with its philosophical sibling, medicine, in helping people understand the biopsychosocial human experience.
References


*Professional Psychology: Research and Practice, 26*(2), 139-146.


Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.


Appendix

Primary Care Curriculum

Psychological Science Foundations (28)
- History and Systems of Psychology (4)
- Foundations of Learning and Behavior (4)
- Cognitive Bases of Behavior (4)
- Psychobiological Functions (3)
- Psychobiological Lab (1)
- Social Bases of Behavior (4)
- Human Developmental Bases of Behavior (4)
- Foundations of Health Psychology (4)

Medical Science Foundations (25)
- Introduction to Medicine (2)
- Anatomy & Physiology (4)
- Neuroscience (4)
- Epidemiology (4)
- Physiopathology (4)
- Pharmacology (4)
- Clinical Pharmacotherapeutics (3)

Research Foundations (16)
- Advanced Statistics I (4)
- Advanced Statistics II (4)
- Methodology and Research Design (4)
- Principles of Psychological Measurement (2)
- Program Evaluation (2)

Cultural and Individual Differences (8)
- Cross-Cultural Clinical Psychology (2)
- Sex Roles and Gender Issues (2)
- Ethnic Diversity and Community Issues (2)
- Spirituality and Clinical Issues (2)

Clinical Psychology Foundations (22)
- Introduction to Clinical Psychology (2)
- Ethics and Law in Psychology (2)
- Adult Psychopathology (4)
- Developmental Disorders and Child Psychopathology (2)
- Geriatric Psychology (2)
- Rehabilitation Psychology (2)
- Introduction to Cognitive-Behavioral Therapy (3)
- Cognitive-Behavioral Therapy – Lab (1)
- Therapy Model Elective (4)

Psychological Assessment (15)
- Psychological Assessment I – Intellectual and Functional Assessments (2)
- Psychological Assessment I – Lab (1)
- Psychological Assessment II – Objective Personality Assessment (2)
- Psychological Assessment II – Lab (1)
- Psychological Assessment III – Projective Personality Assessment (2)
- Psychological Assessment III – Lab (1)
- Psychological Assessment IV – Neuropsychological Assessment (2)
- Psychological Assessment IV – Lab (1)
- Psychological Assessment V – Integrative Report Writing (2)
- Psychological Assessment V – Lab (1)

Psychological Interventions (22)
- Advanced Cognitive-Behavioral Therapy (3)
- Group Psychotherapy (2)
- Group Psychotherapy – Lab (1)
- Family and Marital Therapy (2)
- Treatment of Addictions (3)
- Human Sexual Behavior and Therapy (2)
- Assessment and Treatment of Abuse and Sexual Trauma (2)
- Health Behavior Change (3)
- Assessment and Treatment of Chronic Pain (2)
- Principles of Biofeedback (2)

Behavioral Health Systems (9)
- Medical Terminology (2)
- Health Policy (2)
- Health Care Administration (3)
- Consultation-Liaison Services (2)

Pre-Practicum (3)

Clinical Practicum (12)

Pre-doctoral Internship (4)

Doctoral Research (8)

Doctoral Project (4)

Units are listed after course and expressed in a four quarter academic year format.