

Diversity and consistency: the challenge of maintaining quality in a multidisciplinary workforce

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Non-physician clinicians have become prominent providers of patient services within the practice of medicine. They include nurse practitioners and clinical nurse specialists, physician assistants, the alternative and complementary disciplines (chiropractic, naturopathy and acupuncture), mental health providers (psychologists, clinical social workers, counsellors and therapists) and specialty disciplines (optometrists, podiatrists, nurse anaesthetists and nurse-midwives). Although these various disciplines have differing histories and philosophic frameworks, which create distinctive approaches to patient care, they have shared a struggle to obtain recognition and autonomy through state licensure, to expand their state-granted practice prerogatives and to achieve broader reimbursement from third-party payers and managed care. Most entered into a growth spurt beginning in the early 1990s. All now provide care that not only overlaps that of physicians but that complements and supplements that care. The central question is, how does their care contribute to quality?

The evidence thus far shows that non-physician clinicians throughout the range of disciplines can produce high-quality outcomes under particular circumstances. However, the strongest body of evidence is derived from care that is at the least complex end of the clinical spectrum or that is provided under the umbrella of physicians. Unfortunately, few studies have critically examined the outcomes of non-physician clinicians at the leading edge of their practice prerogatives and under conditions that are free of physician oversight. Thus, while the principle that they can deliver high quality care within the practice of medicine is unequivocally true, more research is needed to test this principle under conditions of greater clinical complexity and autonomy, and, pending the results of such research, caution must be exercised in applying this principle too broadly.

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Introduction

In reviewing the non-physician clinician (NPC) disciplines in 1998, we stated that they would be a growing force within clinical medicine.^{1,2} It seemed clear then that their numbers would grow, their practice prerogatives and prescriptive privileges would increase, and they would gain greater independence from physician supervision. We questioned how regulators would be able to determine what level of prerogatives they should have, how patients would be able to choose from physicians and practitioners in the various non-physician disciplines, and how payers could be assured that the presence of this increasing spectrum of providers would not create redundancies in services and costs. But, most of all, we asked how high quality could be assured.

Growing shortages of physicians, both in the US³ and in England,⁴ are creating pressure to further broaden

the range of practice prerogatives of NPCs, which makes the question of quality even more important. This paper examines the evidence that exists for the clinical effectiveness of NPCs, drawing principally upon experiences in the US. It spans a range of disciplines, each with its own history and distinctive characteristics, and looks for the commonalities among them to aid in answering the central question of whether quality can be maintained in a multidisciplinary workforce.

The non-physician disciplines

The licensed non-physician disciplines customarily considered include nurse practitioners (NPs) and clinical nurse specialists; physician assistants (PAs); the alternative and complementary disciplines (chiropractic, naturopathy and acupuncture); a group of disciplines that provide mental health services (psychologists, clinical social workers, counsellors and therapists); and four disciplines that are focused on specific areas of specialty medicine (optometrists, podiatrists, certified registered nurse anaesthetists and certified nurse-midwives).

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Nurse practitioners and physician assistants

Both NPs and PAs emerged as new disciplines in the mid-1960s, largely in response to an accumulated shortage of physicians, particularly in primary care and most severely in rural communities. Although by 1970 the US had embarked on a major expansion of medical school capacity, it was unclear whether sufficient numbers of new doctors would be produced. Even if they could, they would not be available in appreciable numbers for many years. One approach to filling the gap was to develop training programmes for NPs, patterned after the successful model of nurse-midwives that had evolved in the 1930s. A second was to create the new profession of PAs, modelled after the corpsmen who had served in the Korean War and who were returning to civilian life. A third approach was to establish the new physician specialty of family practice as a means of rejuvenating the languishing field of general practice. Although national foundations and federal grants aided all three of these efforts, each discipline developed largely independent of the others.

By 1990, NPs and PAs had achieved a great deal. NPs were specifically licensed as advanced practitioners in half of the states and PAs were certified or otherwise recognized in almost every state. The supply of NPs had grown to 28 000 and the number of practising PAs had reached 19 000.¹ However, the greatest increment occurred over the next decade, stimulated by a belief that primary care would become the predominant mode of medical service in the US. In part, the resulting increase in NPs was at the expense of nurses who might otherwise have trained to become clinical nurse specialists and who are focused on distinct areas of specialty medicine, rather than primary care. Taken together, the number of nurse practitioner and clinical nurse specialist graduates increased from fewer than 3500 in 1990 to more than 8000 by 2000, equivalent to half of the output of allopathic medical graduates. Over the same period, the number of PA graduates increased almost four-fold, from 1250 to 4500. In 2000, there were approximately 77 000 NPs and 36 000 PAs, and they were licensed or similarly recognized in every state.

Alternative and complementary practitioners

A parallel dynamic led to increased numbers of practitioners in the alternative and complementary disciplines. Growth has been greatest in chiropractic, a discipline that was founded at the end of the 19th century and, after struggling through most of the 20th century, emerged as a significant source of care for mild musculoskeletal conditions and a host of other disorders within the spectrum of primary care. Like NPs and PAs, the number of chiropractors in the US grew most rapidly during the 1990s, increasing from approximately 45 000 to more than 60 000. There was a simultaneous increase in the number of acupuncturists, who were few in number and not widely recognized within health care before 1990, but who, by the century's end, numbered

more than 16 000 and were licensed in 40 of the 50 states. There was also an increase in the small workforce of naturopathic physicians, who, like allopathic and osteopathic physicians, attend a four-year medical school but whose training is limited to the treatment of conditions using natural products and physical remedies, and who still number fewer than 1500.

Mental health practitioners

The third group of NPCs whose prominence grew after 1970 was the mental health providers. The stimulus for this growth was an increasing demand for low-cost psychotherapy and for community mental health services. What followed was a massive outpouring of psychologists, clinical social workers, counsellors and therapists, initially fueled by grants from the National Institute of Mental Health. While psychiatry's ranks barely doubled to 48 000 between 1975 and 1996, psychology's more than tripled to 75 000. During the same period, the number of clinical social workers grew to more than 200 000, and 100 000 counsellors and therapists emerged from disciplines that were virtually nonexistent in the 1960s.

Specialty non-physician clinicians

These substantial outpourings of NPCs that occurred in primary care and mental health were not replicated in the four specialty-specific disciplines, each of which was well established before 1970. Nurse anaesthetists had existed from the beginning of anaesthesia and, indeed, nurses were the predominant providers of anaesthesia until the 1970s, when anaesthesia became a more attractive medical specialty. There currently are 35 000 anaesthesiologists and approximately 26 000 nurse anaesthetists. Optometry dates from the early 1900s, although its early practices were confined to optics and refraction and, therefore, were not considered to be part of the practice of medicine. It is comparatively recently that optometrists have become involved in the treatment of eye diseases, in which they are playing an increasing role. There are currently approximately 27 000 optometrists but fewer than 18 000 ophthalmologists.

Like optometry, podiatry had its origins as a profession in the early 1900s, although its roots reach to antiquity. However, it was the performance of foot surgery in the last half of the 20th century that brought podiatry's 12 000 members into the realm of medical practice. The smallest of these four specialty disciplines, and the most recent to have developed, is nurse-midwifery. It emerged from nursing during the 1920s and 1930s as a response to inadequate obstetrical care among disadvantaged women, after the virtual elimination of lay midwives by medical practice acts in the early 1900s. At present, there are 5500 certified nurse-midwives in the US, as compared with 37 500 obstetrician-gynaecologists, and they perform approximately 7% of the deliveries, half as many on a per practitioner basis as do their medical colleagues.

Autonomy and independence

Assessing the quality of care that NPCs provide is complicated by the variety of relationships that they maintain with physicians, either as a result of restrictions in state practice acts or by choice. At the extremes, NPCs either practice under the supervision of a physician or as autonomous and independent clinicians, but there are many gradations in between. For example, NPs may practice independently in 16 states and prescribe independently in ten, whereas 26 states require them to have an established collegial relationship or a cooperative agreement with a physician, and nine require that they work under physician supervision. Although PAs must always work under the delegated authority of a physician, most states allow them to practise within a radius of 50 miles or a one-hour drive from the supervising physician, as long as the opportunity for telephone contact is maintained. Moreover, the required frequency of direct contact with a physician varies from daily in most states to weekly in 12 states and 30-day intervals in seven. In three states, physicians are required to review only 10–15% of the PA's charts.

Chiropractors practice independently in all states, as do naturopaths (in the 14 states in which they are now licensed). Acupuncturists, who are licensed in 40 states, must practise under physician supervision in six states, and in eight others they must have an established relationship with a physician or accept patients only on referral from a physician. Similarly, optometrists, podiatrists and psychologists are generally licensed to practise independently, but more than half of the 34 states that allow optometrists to treat glaucoma require consultation or co-management with a physician or, for particular types of glaucoma, referral to a physician. In like manner, New Mexico, which has recently enacted a statute granting prescriptive privileges to psychologists, requires physician involvement for the first two years that a psychologist prescribes.

The independence of nurse anaesthetists is the most complex because it is defined not only in state practice acts but also in separate statutes that license hospitals or regulate ambulatory surgery centres and in Medicare's conditions of participation for hospitals. Most of these require the involvement of a physician (or operating dentist or podiatrist), and some require supervision by a physician, but a specific requirement for supervision by an anaesthesiologist is unusual, except in free-standing ambulatory surgery centres.

A corollary of independence is standards. In the main, each discipline is held to its own standard, as also is the case among the various specialties of medicine. However, in almost half of the states, optometrists are held to the standard of care of ophthalmologists in the treatment of all eye diseases. This notion of parity for optometrists was extended even further in legislation that was introduced in New Jersey, which prohibited optometrists from supplying glasses or lenses, a mainstay of their income, because doing so represents self-referral, a practice that is prohibited for ophthalmolo-

gists under the Stark Law.⁵ Standards are also imposed by hospitals and managed care organizations. Indeed, the managed care standards to which chiropractors are now being held have been a source of concern among some practitioners of that discipline. These examples highlight what will certainly become a more active and possibly contentious arena of concern as NPCs become engaged more deeply in the practice of medicine.

Compensation

The degree of autonomy under which NPCs practice is influenced by compensation arrangements. One factor in this equation is the care that NPCs provide to underserved populations. While 11% of physicians and 18% of osteopaths practise in rural communities, one-third of PAs and half of all chiropractors practise in communities that have populations smaller than 50 000. Similarly, half of NPs practise in underserved areas, most nurse-midwives care for poor and socially marginalized patients and half of all rural hospitals depend entirely on nurse anaesthetists for anaesthesia. Chiropractors attained licensure in several states in the 1960s because of a lack of primary care providers in small communities, and the development of training programmes for NPs and PAs had the same basis. Indeed, the initial point of access to Medicare and Medicaid reimbursement for NPs, PAs and nurse-midwives was the Rural Health Clinics Act of 1977, which only permitted reimbursement for care provided in physician-directed clinics in rural underserved areas. Over the next twenty years, this was progressively expanded to include reimbursement in all settings without physician supervision (unless it was required by the state), and reimbursement was set at 85% of the physician fee schedule. The rural roots of this reimbursement are significant. The fact that optometrists are the only providers of eye care in many small communities facilitated their access to glaucoma patients, and the fact that few psychiatrists practise outside of the two major cities in New Mexico was a major factor in permitting psychologists to gain prescriptive privileges in that state.

Compensation arrangements that exist within medical groups also influence the utilization of NPCs. The Medical Group Management Association tracks the 'compensation-to-production ratio', which measures the salary that each practitioner receives and the fees that they generate (free of technical fees).⁶ For family physicians in 2000, this ratio was 0.45, whereas it was 0.41 for NPs and 0.34 for PAs, indicating that groups were able to retain a larger fraction of the fees of NPs and PAs than of physicians. Similarly, the ratio was 0.51 for anaesthesiologists but 0.36 for nurse anaesthetists and it was 0.61 for psychiatrists but only 0.51 for psychologists. This phenomenon is exaggerated under Medicare's conditions of reimbursement, where anaesthesiologists who supervise up to four nurse anaesthetists receive 50% of the fee. Similar factors were important in the arrangements between physicians and NPCs in Britain under the now defunct system of GP

fund-holding as compared with the current system of primary care trusts.⁷

Philosophy

The assessment of outcomes is also confounded by the differing philosophical roots and treatment goals that exist among the NPC disciplines. The medical perspective is not the only basis for judging outcomes. For example, while the disease paradigms that are embraced by optometrists and podiatrists parallel those of allopathic medicine, and while, by serving as assistants to physicians, PAs practice within the medical model of care, these close similarities do not characterize most of the other disciplines. NPs approach patients from the nursing perspective, which emphasizes the wholeness of patients, and NP training stresses patient education.⁸ Nurse-midwives also come from a background of nursing in the US, but they enter the separate discipline of midwifery,⁹ which is rooted in holistic family counselling and patient education and in a commitment to disadvantaged patients. Chiropractors and naturopaths stress the stimulation and support of natural processes, while most practitioners of acupuncture and herbal medicine approach diagnosis from an oriental perspective (look, smell, listen and feel) and treat within the tradition of Chinese medicine, which emphasizes prevention and the restoration of balance. These differing philosophies shape the expectations of patients and colour the outcomes that NPCs strive to achieve. Since a large fraction of the care that they provide includes wellness care, the care of patients during episodes of self-limited disease or the management of chronic pain syndromes, where defined disease endpoints are either absent or ambiguous, these differing philosophical approaches become important elements in assessing outcomes. Indeed, when major outcomes include comfort, reassurance, empowerment and patient satisfaction, the conventional standards by which outcomes are judged fall by the wayside and cost-benefit analyses become elusive.

Scope-of-practice and quality

Specialty non-physician clinicians

The scope-of-practice of NPCs is not static. Rather, in each discipline, the range of prerogatives has progressively widened to include conditions or procedures of greater complexity. However, it is disorders of lower complexity that predominate and, therefore, are represented most strongly in measures of clinical outcomes. For example, more than 95% of nurse anaesthetists administer anaesthesia for patients in ASA Classes I-III, but only 56% do for patients in Class V, and most work in an environment in which anaesthesiologists participate, if not supervise. Because of these factors, as well as the safety of anaesthesia today, studies that have the power to show differences in outcomes between care that is directed by anaesthesiologists and that of nurse

anaesthetists working alone are difficult to construct, and few exist. One, which was conducted 25 years ago, found similar case fatality rates associated with anaesthesia for nurse anaesthetists and anaesthesiologists, although no correction was made for case mix.¹⁰ A contemporaneous study that compared morbidity and mortality among hospitals in which anaesthesiologists or nurse anaesthetists were the predominant providers failed to show differences even after adjusting for comorbidities, but its focus on hospital characteristics and its inclusion of morbidity unrelated to anaesthesia blurred distinctions between the two disciplines.¹¹ The study that has received the widest attention used Medicare claims data to assess 30-day mortality among patients whose anaesthesia was either directed by an anaesthesiologist or was not.¹² It concluded that more deaths and complications occurred when nurse anaesthetists were undirected, but its focus on 30-day mortality was principally a measure of post-operative care rather than anaesthesia risk. Indeed, many of the hospitals in which nurse anaesthetists work without anaesthesiologists are rural hospitals, which are known to have higher 30-day mortalities across disease categories, with or without surgery. Despite the lack of objective evidence of poorer outcomes, many anaesthesiologists are concerned that nurse anaesthetists lack the depth of knowledge to formulate appropriate and cogent management plans for their patients. However, nurse anaesthetists are broadly accepted when working in a model in which anaesthesiologists direct care, even when they oversee four procedures simultaneously.

Different problems are encountered in evaluating outcomes in optometry. While the bulk of optometric care is related to refraction, optometrists also screen and monitor patients with diabetes and glaucoma. In recent years, they have undertaken the co-management of patients after cataract or refractive surgery and the independent treatment of glaucoma and other eye diseases. Two British studies have shown that suitably trained and accredited community optometrists can effectively screen diabetics.^{13,14} Indeed, ophthalmic opticians could be similarly trained.¹⁵ Optometrists also have been shown to assess reliably the optic disc in patients who have or are at risk for glaucoma,^{16,17} although inter-observer variation is greater among optometrists than among ophthalmologists, and those optometrists who completed a residency performed better than those who did not.¹⁸ Co-managing patients after cataract surgery has become a particularly sensitive issue, both because of ethical concerns associated with what might be interpreted as fee splitting and kick-backs,¹⁹ and because of clinical concerns about the quality of follow up.^{20,21} Although optometrists who follow cataract patients tend to perform diagnostic procedures less frequently than ophthalmologists,²⁰ they detect complications in patients with no pre-existing ocular or medical conditions with almost 100% specificity and with 96% sensitivity.²² Thus, in their screening and monitoring practices, properly trained optometrists can provide care that is equivalent

to that of ophthalmologists. However, comparable studies on the outcomes of treatment for glaucoma and other eye diseases do not exist and are sorely needed. Similarly, there are virtually no comparative studies for podiatrists, who are licensed in all of the states as surgical foot specialists and who are permitted to amputate toes in ten states. Indeed, like optometrists and nurse anaesthetists, podiatrists lack a tradition of clinical research.

Nurse practitioners and physician assistants

Although commonly evaluated together, NPs and PAs are trained quite differently. NPs are the product of two-year master's programmes, which follow baccalaureate nursing education and often an intervening period of work in nursing. In contrast, most PA programmes require four years of college, and they generally consist of eight quarters of PA training followed by one year of supervised practice leading to a bachelor's degree or, with an additional quarter and more rigid academic benchmarks, a master's degree. Most NPs work in primary care settings, such as family practice, women's health, paediatrics or geriatrics, and while having the authority to practice independently in 12 states, most work within the context of physician practices, either in hospitals or in the community. However, the goal of NPs is independence and collegiality rather than dependency and supervision. In an extreme example, which will be commented upon below, a small but prominent group of nursing educators is developing a differentiated pathway for doctoral-level nurse-family practitioners (DrNPs) who would be trained to become the primary care providers of choice for patients with most chronic illnesses.²³

In contrast, PAs retain their dependent relationship with physicians, working in a delegated or supervised manner. Nonetheless, their stature and autonomy have progressively increased. For example, PAs now have full licensure in all but eight states, which offer certification or registration instead. Forty states allow PAs to prescribe controlled substances if delegated by a physician. While some PAs seek greater degrees of independence, the American Academy of Physician Assistants is committed to retaining an interdependent relationship between PAs and physicians. Unlike NPs, only half of PAs work in primary care or in urgent and emergency care. The other half span a range of specialties including cardiology, dermatology, gastroenterology, neurology, general surgery, the surgical subspecialties, obstetrics, gynaecology and others. They assist in surgery, oversee specialty clinics, such as those for arrhythmias, lipid disorders, congestive heart failure and diabetes; and they perform procedures such as endoscopies, biopsies and others at a similar level of complexity. Like NPs, they participate in patient education, counselling and chronic disease management.

A rich body of literature has assessed the quality of care provided by NPs and PAs. Indeed, this literature began to appear in the early 1970s, shortly after these

two professions began. In a landmark study published in 1974, NPs were shown to perform within their scope of office-based practice as effectively as physicians,²⁴ and by the end of the 1970s, 40 studies evaluating both NPs and PAs reached the same conclusions.²⁵ Similar conclusions concerning not only NPs and PAs but also nurse-midwives were supported by the even larger bodies of work that were summarized by the Office of Technology Assessment²⁶ in 1986 and by Brown and Grimes in 1993.²⁷ These assessments indicated that NPs and PAs could provide care for 60–90% of the patients in primary care. However, as noted by Sox, because these evaluations were limited to office-based care that was provided under physician direction and at a level that was then permitted by licensing authorities, their conclusions should not be extended to unsupervised care or the care of seriously ill patients.²⁵

The decade since Brown and Grimes' analysis²⁷ has been marked by a progressive expansion of the licensed prerogatives of both NPs and PAs and, correspondingly, of the roles that they play. While much of the recent research on quality and effectiveness continues to focus on primary care and related activities, including screening, some studies have also assessed the performance of NPs as case managers for patients with chronic conditions, such as childhood asthma, hypertension, diabetes, congestive heart failure and AIDS/HIV, as well as their effectiveness in areas of even higher complexity, such as oncology home care, the care of at-risk pregnancies and work performed in urgent centres, emergency rooms and neonatal intensive care units. It is important to note that, in these latter roles, NPs have functioned within the overall context of physician-directed care rather than as independent practitioners. Throughout these studies, the common themes were that health outcomes of NPs were equal to those of physicians with equal or lower costs, shorter waiting times and higher patient satisfaction. Moreover, these results were observed whether the analyses were performed by nurses, physicians or health services researchers or by a combination of them. The same general conclusions emanate from a broad series of reports that describe the outcomes of PAs in both primary care and specialty practices. Collectively, they demonstrate that PAs perform competently within the framework of their delegated responsibilities and that the complexity and autonomy at which they function are greater in situations in which they have worked for sustained periods with the same physician.

Substitutes for junior hospital doctors (residents)

One role that NPs and PAs have come to play is that of substitutes for residents, a role that has become increasingly important as the number of residents has plateaued. In the mid-1980s the number of residents in the US increased from 75 000 to 85 000, due almost entirely to a lengthening in the duration of training. In the early 1990s, there was a second surge of growth to 100 000, due principally to additional numbers of

non-American medical graduates entering training in the US. During the ensuing years, under the influence of managed care, hospital capacity has contracted, though patient severity has increased, sustaining the need for this number of residents. Over the past few years hospitals have begun to expand again, but since 1993 the number of residents has remained unchanged, and, in reality, residency levels have decreased due to the imposition of duty hour restrictions. Moreover, the ability of hospitals to hire additional residents has been restricted by the Balanced Budget Act of 1997. In response, hospitals have employed NPs and PAs to fill certain of the service roles that residents normally serve.²⁸ Currently, almost 4000 PAs serve in this capacity.²⁹ While initial estimates called for a 3:1 replacement ratio relative to residents,³⁰ replacement has more often been at 1:1,^{31,32} and while it was estimated that costs would rise with NPs and PAs, that has not proven to be the case. Indeed, outcomes in relation to both quality and cost compare favourably with residents.^{32,33}

Doctor of nursing practice

Recently, a group of nursing educators has proposed the creation of a new category of NPs with doctoral level training (DrNPs).²³ These practitioners would function at the level of family physicians, with hospital admitting privileges and full parity of reimbursement. Unlike NP training, which is oriented to office-based primary care, DrNPs are expected to care for their patients regardless of the site of care – emergency room, hospital, office, home, rehabilitation centre and nursing home. In this respect, the care that they provide would be similar to that of family physicians. However, the DrNP degree also continues nursing's traditions of health promotion, disease prevention and patient education. A model of such a practice has been established by the Columbia University School of Nursing.³⁴ In a randomized study of follow-up care for patients who presented to an emergency room and who had no personal physician, care by either physicians or Columbia nursing faculty showed similar outcomes at one year in terms of both clinical status and patient satisfaction.³⁵ Unfortunately, the unusual demographics of these patients (90% Hispanic, 77% female, average age of 44 years and largely poor), the relatively brief period of follow up in primary care (one year), the low follow-up rate (<60%) and, most importantly, the unusual nature of the NPs who engaged in this study (all of whom were from the Columbia faculty), make it difficult to generalize to a wider population of patients over a longer period of time under the care of average practitioners.

The British nurse practitioner experience

Four studies in Britain over the past few years have examined the effectiveness of NPs in providing same-day consultation for minor illnesses in general practice. As a rule, GPs saw patients who were more sick, had co-

morbidities or required hospitalization. Nonetheless, NPs found it necessary to consult with GPs on 6–12% of their own patients. In this setting, NP consultations were 10–50% longer in duration and patient satisfaction was greater, but both resource utilization and health outcomes were similar.^{36–39} A study comparing the care of minor injuries by emergency NPs and junior doctors reached similar conclusions.⁴⁰ Both experiences mirror those of NPs in the US. Since Britain has not established training programmes for PAs, there are no similar studies of this discipline, although a proposal to train PAs has been made, drawing initially on immigrant physicians who are unable to achieve medical licensure.⁴¹

Chiropractic

Chiropractors constitute the second largest group of the NPCs in the US.¹² Most of their patients carry a neuromusculoskeletal diagnosis, principally low back or neck pain. With support from the federal government, chiropractic has made a concerted effort to establish the efficacy of its therapeutic approaches through outcomes studies but the results have been disappointing.⁴³ For example, in comparative studies of acute low back pain, outcomes have been very similar whether patients were treated with chiropractic spinal manipulation, osteopathic spinal manipulation, physical therapy, massage therapy, medical care provided by either primary care physicians or orthopedic surgeons, or self-care aided by either instructional booklets or back schools. Among these, massage appears to be superior.⁴³ Based on this experience, experts have concluded that spinal manipulation is somewhat effective as symptomatic therapy for some patients with acute low back pain and that it is as effective as other forms of therapy under these circumstances.^{43–45} Less evidence exists for its effectiveness in chronic low back pain. Moreover, even when the effectiveness of chiropractic has been demonstrated statistically, it has tended to be of marginal value clinically. Studies have also failed to find efficacy for chiropractic manipulation in disorders such as fibromyalgia and headaches, which together, constitute 10–20% of chiropractic patient visits, and in a wide range of non-neuromusculoskeletal conditions, including common childhood disorders.^{43,46}

A prominent theme throughout the studies of chiropractic management is the finding that, irrespective of the objective clinical response, patients express higher levels of satisfaction than with other forms of treatment. They also return more often to chiropractors when symptoms recur. This phenomenon does not appear to be related to manipulation, per se,⁴⁷ but stems from the entire chiropractic encounter, which includes sensitivity to patients as individuals, effective communication and a holistic approach to health and disease.⁴⁸ Patients perceive these characteristics as comforting, if not curative, particularly during exacerbations of chronic back pain where, even without objective responses, motivation and coping skills are important.

Acupuncture

Acupuncture was validated by a 1997 consensus conference sponsored by the National Institutes of Health,⁴⁹ which concluded that it may be of value in chronic painful musculoskeletal disorders, such as fibromyalgia, chronic low back pain, osteoarthritis and carpal tunnel syndrome, and that it might also be useful in patients with headache, asthma, post-operative pain, drug addiction and those who are undergoing stroke rehabilitation. Efficacy has also been demonstrated in spinal cord injury patients, and acupuncture has been shown to alleviate nausea and vomiting in early pregnancy, pelvic pain during later pregnancy and pain during delivery. In a recent survey, 61% of acupuncturists identified themselves as primary care providers.⁵⁰ In addition to conditions for which evidence of benefit from acupuncture exists, they reported that they commonly treat patients with diabetes, respiratory disorders, digestive disorders, sleep disorders, emotional disorders, chronic fatigue, allergies and AIDS.

Psychologists

Two aspects of the care provided by doctoral level counselling psychologists are germane to this discussion. First is psychotherapy for patients with anxiety, mood disorders and other common psychiatric conditions, which is the mainstay of their practice. The care that psychologists provide in these circumstances has been found to be appropriate in 90% of cases, as compared with fewer than 20% among patients treated by primary care providers,⁵¹ who see a large volume of such patients. Indeed, primary care physicians fail to detect mental disorders 50% of the time, prescribe pharmacological agents for only 60% of those who are diagnosed correctly, and use adequate levels of treatment in less than half of those who are treated.⁵² The value that psychologists bring to this patient population is without question. It is not surprising, therefore, that many family practice residency programmes include a training psychologist.

The second aspect of care by psychologists is more controversial. It entails the use of psychopharmacological agents. Although as recently as ten years ago, leaders in psychology looked with disdain upon prescriptive authority, efforts to obtain such authority began in Hawaii in 1984 and proceeded, without success, in 14 other states.⁵³ In 1991, Congress authorized a pilot programme in the military, and between 1994 and 1997 ten psychologists completed two-year training programmes in psychopharmacology. Prescribing psychologists were limited to a formulary and to patients between the ages of 18 and 65. They initially practised under the supervision of a psychiatrist, but within several years almost all were permitted to practise independently and each became the chief of a clinic or department, indicating the high professional esteem with which they were held.⁵⁴ While this programme was discontinued because of its training

costs and redundancies in the military, the quality of care provided was considered to have been good-to-excellent and the psychologists were judged to have prescribed safely and effectively with no adverse outcomes.⁵⁴ It should be noted, however, that even when practising independently, these psychologists were working within institutional settings, not in community practices.

In 2002, New Mexico became the first state to license prescribing psychologists, patterning its programme after the military, with specific requirements for training and a two-year period of supervision.⁵⁵ Similar legislation is pending in Texas, Nebraska and elsewhere. However, even without such legislation, a small group of psychologists who trained as nurse practitioners have been prescribing under their nursing licenses, and many psychologists prescribe *de facto* through their relationships with family physicians. Nonetheless, psychiatrists protest that psychologists are not adequately prepared for this role and many psychologists agree, but the profession is attempting to integrate the use of psychotropics into its training programmes to compensate for any deficiencies.

Conclusion

This paper began by asking whether quality can be maintained in a system in which the provision of medical care is shared with an array of non-physician clinical disciplines, each with different histories, differing philosophical foundations, different training and different clinical traditions. The answer is a qualified yes. The evidence shows that practitioners in a range of NPC disciplines are able to produce high quality outcomes under particular circumstances. However, the strongest body of evidence supporting their autonomous roles is derived from care that is at the least complex end of the clinical spectrum, often under circumstances in which there is significant physician involvement. Fewer studies have evaluated care by NPCs that is of a more complex nature, and most of them have been under conditions in which substantial physician oversight was present. Examples include NPs in neonatal intensive care units, nurse anaesthetists in hospitals that lack anaesthesiologists (but in which surgeons are in attendance), NPs and PAs as house staff substitutes and military psychologists with prescriptive authority. In each of these circumstances, NPCs performed effectively and brought a great deal of value to the clinical encounter. Unfortunately, few studies have critically examined outcomes at the leading edge of their practice prerogatives and free of physician oversight, such as the practices of independent family nurse practitioners, therapeutic optometrists, operating podiatrists and prescribing psychologists in community settings. Thus, while the principle that NPCs can deliver quality care within the practice of medicine is unequivocally true, more research is needed to test this principle under conditions of greater clinical complexity and autonomy,

and, pending the results of such research, caution must be exercised in applying this principle too broadly.

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Researching patient–professional interactions

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This paper explores the nature and future of social research on patient–professional interactions. It first sketches the historical background to such research and notes that in the UK and US this was characterised by a focus on the doctor–patient relationship. This research embodied a sceptical view of the power of the medical profession in sustaining and promoting social inequalities, and a critique of ‘medical dominance’ over other health care professionals and patients. The paper then goes on to outline changes occurring in the nature of professional practice that suggest a fundamental shift in the social relations of health care and the role of medicine. These include a putative loss of public confidence in the medical profession and the authority of science, an increased role of the media in informing patients, and a change in the state’s relationship with health care professionals. Finally, the paper outlines some items for a future research agenda, including the need to understand better patient preferences about changes in health care delivery, including a willingness to engage in ‘partnership’, and the possibilities and barriers to change in professional practice.

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Introduction

Interactions occur daily in health care settings and the use of the term here signals the sociological angle being employed, as in ‘social interactions’. The plural has been used because patient–professional contact takes many different forms, especially in a huge enterprise such as a national health care system. The paper is divided into three sections. The first provides a brief background on the history of research on patient–professional interactions, especially sociological research, and identifies some of the main themes found there. The second considers the current social, policy, and practice context against this background, focusing particularly on the issue of researching ‘partnership’ between patients and professionals. And the third sets out some suggestions for future research.

Background to researching patient–professional interactions

In the UK and US there has been a long tradition of sociological research on patient–professional interactions. However, like many traditions, its substance is rather limited, in this case by the fact that it has focused on one particular form of interaction, namely that found in the ‘doctor–patient relationship’. There are two things to note straight away about this body of work.

The first, as I have pointed out elsewhere, is that accepting uncritically the notion of the ‘doctor–patient relationship’ (note, also, the definite article) is a rather peculiar thing to do.¹ To be sure, there *is* something special about contact between doctors and patients, if only because taboos surrounding bodily and other intimate matters are frequently broken in doctor–patient interactions, and that a peculiar form of trust has to exist between doctor and patient to legitimate such taboo breaking. Moreover, unlike most (though not all) forms of other lay–professional contact, matters of life and death may be at stake. Talcott Parsons referred to the doctor–patient relationship as ‘fiduciary’ in character, not only invoking but also extending the idea of reputation and trust that is involved in some forms of financial transaction.²

Nonetheless, we need to consider the idea that a special ‘relationship’ exists between doctors and patients constitutes a rhetorical device, used on occasion by the medical profession to claim certain kinds of legal and professional privileges – largely to autonomy over practice and dominance over other professions. The use of the term ‘relationship’ has thus served ideological purposes (alongside serving patient interests) including that of legitimating paternalism. It has been used in public debates and in trade union negotiations as a means of keeping state encroachment on medical activity at bay and as an alternative to ‘shroud waving’ in demanding more resources, not to say more pay. In arguing for the protection and enhancement of its special position, it has been difficult to resist demands, on the part of the profession, that appear to help protect a form of interaction held to be at the heart of health care delivery.

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