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Chapter 1

# Summary and Policy Conclusions

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## INTRODUCTION

The use of nurse practitioners (NPs) and physician assistants (PAs) to provide primary health care traditionally provided only by physicians developed during the 1960s in response to a perceived shortage and maldistribution of physicians. Societal support for this innovation in the delivery of health-care was based on the potential for NPs and PAs to improve access and to lower costs while maintaining the quality of care. At about the same time the number of certified nurse-midwives (CNMs),<sup>1</sup> who had been providing health care for some 30 years, began to increase substantially.

In the past two decades, the ranks of NPs, PAs, and CNMs and their responsibilities for providing care to patients have increased, despite the resistance these practitioners have encountered in their attempts to assume more prominent or more independent roles in delivering health care. Today, approximately 15,400 NPs, 16,000 PAs, and 2,000 CNMs are practicing in the United States.

Changes in the health-care environment have altered the forces that spurred the development and growth of these groups of providers. The health-care sector has become increasingly competitive as the supply of physicians has grown and as the proportion of physicians practicing in the primary-care specialties has decreased. New forms of organization for the delivery of medical care have emerged. Concern over the rapidly rising costs of health care has grown, and new methods of paying for hospitals' inpatient services have been implemented. All of these changes have implications for the roles NPs, PAs, and CNMs will play in the future, and for the quality, accessibility, and costs of health care.

As the health-care delivery system evolves, NPs, PAs, and CNMs are exploring ways to overcome several obstacles, such as unsupportive

physicians, restrictive State laws and regulations, and the inaccessibility and cost of malpractice insurance. Although these problems are significant (see box 1-A), they are beyond the scope of this study, which focuses on another major barrier—limited third-party payment for the services of NPs, PAs, and CNMs.

## Background and Scope of the Case Study

This case study was prepared in response to a request by the Senate Committee on Appropriations to update a previous OTA case study, "The Cost and Effectiveness of Nurse Practitioners." The committee also requested that OTA address the extent to which various Federal health-care programs and private third-party payers pay for the services of NPs and CNMs. Of particular interest to the committee were the issues of coverage (i.e., authorization for payment) and direct payment (i.e., payment to NPs and CNMs) for their services.<sup>2</sup> The committee also requested that OTA review the evidence on the quality and costs of the care NPs and CNMs provide. The analysis also addresses PAs because their historical background and current roles are similar to that of NPs, and because information on NPs often overlaps with information on PAs.

In considering NPs and PAs, the study focuses on the large majority who provide primary care, although some attention is given to the roles of NPs and PAs in nonprimary-care settings. No distinction is made between primary-care PAs and PAs trained in Medex programs specifically to provide primary care to underserved populations.

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<sup>1</sup>This case study uses the word *certified* to distinguish formally trained and certified nurse-midwives from lay midwives, who may or may not be nurses and who have informal training in midwifery.

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<sup>2</sup>The Medicare program and other third-party payers distinguish between coverage and payment. Coverage refers to benefits available to eligible beneficiaries or subscribers; payment refers to the amounts and methods of payment for covered services.

### **Box 1-A.—Selected Obstacles Faced by Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives**

#### **Physicians' Resistance**

The limited acceptance and, in some cases, outright opposition with which some physicians have met NPs, PAs, and CNMs have restricted employment opportunities for these practitioners. Their use is determined by the settings and the supervisors. In some settings (e.g., health maintenance organizations), NPs, PAs, and CNMs are likely to perform the whole range of services for which they were trained. In other settings (e.g., private practices), however, some physicians are apparently reluctant to delegate primary-care tasks.

#### **Legal Restrictions**

The restrictions placed on NPs', PAs', and (to some extent) CNMs' practices by State laws and regulations discourage the integration of these providers into the health-care delivery system. Requirements vary widely from State to State with respect to such matters as physicians' supervision, drug prescription, and independent practice. The requirements are often ambiguous and prevent these providers from practicing at levels commensurate with their training. Furthermore, the lack of uniformity and clarity of the laws and regulations may discourage physicians from hiring these providers. The considerable variance reflects disagreement among the States about the competence levels and appropriate roles of NPs, PAs, and CNMs. During the past decade, however, States have generally lowered the legal barriers to NPs', PAs', and CNMs' practice. For example, between 1965 and 1975 no State permitted NPs to prescribe medications; four States did so between 1975 and 1980; 14 more States have done so since 1980. The trend is not universal. An attempt made after 1980 to permit NPs to prescribe drugs was defeated in the California legislature (154).

#### **Inaccessibility and Cost of Malpractice Insurance**

The malpractice crisis has affected most health-care practitioners and providers. Insurers have significantly increased premiums, and have refused altogether to underwrite malpractice policies for some practitioners, including CNMs. As a result, an unknown number of CNMs were forced to close their practices, and about 30 (out of 140) birthing centers closed (136). Although progress is being made in obtaining liability insurance for some CNMs—e.g., a consortium has been formed to underwrite insurance for members of the American College of Nurse-Midwives—increasing liability insurance premiums, may lead CNMs, obstetricians, and other health professionals to change their practice patterns or to stop practicing entirely.

#### **Limitations on Coverage and Payment for Interpersonal and Preventive Care**

Most third-party payers provide little or no coverage for preventive services and interpersonal services, such as health education and counseling, which are integral to the activities of NPs, PAs, and CNMs. The problem affects all health-care providers and has received broader analysis elsewhere. A recently released OTA report, *Payment for Physician Services: Strategies for Medicare*, provides a detailed discussion of the differences in payments for nonprocedural and procedural services.

The central questions the study attempts to answer are:

- What contributions do NPs, PAs, and CNMs make in meeting the Nation's health-care needs?
- How would changing the method of payment for the services of NPs, PAs, and CNMs affect the roles these practitioners would play in the evolving health-care delivery system?

. How would changing the payment method affect health-care costs for patients, third-party payers, and society?

#### **Organization of the Case Study**

The case study is organized into five chapters and two appendixes. Chapter 1 presents a summary of the case study and in an addendum de-

finer and describes NPs, PAs, and CNMs. Chapters 2 through 4 discuss the contributions of NPs, PAs, and CNMs to health care. Chapter 2 addresses the quality of care, reviewing studies that compare the care provided by NPs, PAs, and CNMs with that provided by physicians and studies that gauge patients' satisfaction with and physicians' acceptance of the care provided by NPs, PAs, and CNMs. Chapter 3 considers access to health care; and chapter 4 focuses on productivity, costs, and employment. Chapter 5 analyzes what implications various payment modifications would have for the employment and practice of NPs, PAs, and CNMs and for health-care costs; examines the effects new developments in the health-

care sector could have on NPs, PAs, and CNMs; and assesses how payment modifications in the context of a rapidly changing health-care system might influence the roles of these practitioners and the costs of health care.

Appendix A describes the method of the study and acknowledges the assistance of the individuals and organizations that reviewed this case study and provided valuable advice on its content. Appendix B presents a detailed description of payment for the services of NPs, PAs, and CNMs by third-party payers in the public and private sectors.

## SUMMARY

Understanding how the use of NPs, PAs, and CNMs affects the quality of care, the access to care, the productivity of providers, and the costs of care is crucial for analyzing the effects of alternative policies regarding payment for the services of these providers. Drawing general conclusions is possible, despite the methodological limitations of many studies.

### Contributions of NPs, PAs, and CNMs

Direct measurement of the quality of the care provided by NPs, PAs, and CNMs is not possible at this time. Instead, the quality must be gauged by comparing their care with the care provided by physicians; by examining the extent to which patients are satisfied with the care provided by NPs, PAs, and CNMs; and by assessing physicians' acceptance of such care. Many studies that analyze these relationships are methodologically flawed and almost none examine the quality of services provided without physician involvement.

The weight of the evidence indicates that, within their areas of competence, NPs, PAs, and CNMs provide care whose quality is equivalent to that of care provided by physicians.<sup>3</sup> Moreover, NPs and CNMs are more adept than phy-

<sup>3</sup>This study examined the quality of the care provided by NPs and PAs in primary-care ambulatory settings and the quality of care provided by CNMs in ambulatory and inpatient settings.



Photo credit: American College of Nurse-Midwives

CNM's improve quality of care and access to care by providing person-oriented services such as health education and counseling.

sicians at providing services that depend on communication with patients and preventive actions. The evidence indicates that PAs also perform better than many physicians in supportive-care and health-promotion activities. Patients are generally satisfied with the quality of care provided by NPs, PAs, and CNMs, particularly with the interpersonal aspects of care. Although most physicians who employ these practitioners are satisfied with their performance, physicians' willingness to delegate medical tasks is limited. Many physicians are more comfortable delegating the routine tasks related to primary care, such as taking histories, than the more technical procedures, such as physical examinations. Employment statistics also reflect physicians' acceptance of these practitioners.

Historically, NPs, PAs, and CNMs have been credited with improving the geographic distribution of care, because many of them have been willing to locate in underserved rural and inner-city areas. As a result of increases in the supply of physicians, some physicians are beginning to practice in smaller communities. Although some experts believe that the maldistribution of physician manpower will improve over time, access to primary care is still limited and may persist as a problem in certain geographic areas. How changing patterns in the distribution of primary-care physicians will affect the employment and the practice patterns of NPs, PAs, and CNMs is uncertain, but these practitioners will continue to play valuable roles in underserved areas.

In addition to improving access to care in rural areas, NPs, PAs, and CNMs increase access to primary care in a wide variety of nongeographic settings and for populations not adequately served by physicians. Studies have shown, for example, that NPs increase access to primary care for underserved children in school settings, and elderly patients in nursing homes. CNMs provide effective and low-cost maternity care to underserved, socioeconomically high-risk pregnant women and adolescents. NPs, PAs, and CNMs have also improved access by adding to the scope of primary-care services available to patients. NPs and PAs are competent in guiding individuals through today's complex health-care system and in caring for chronically ill adults and children. Preliminary reports indicate that NPs and PAs also increase

access to primary care in other settings, such as, in the home and in correctional institutions, where needed medical care is not always available.

In principle, the scope of NPs' and PAs' practice encompasses most of the primary-care services provided by their physician counterparts. **Productivity studies indicate that NPs and PAs working under physicians' supervision can increase total practice output by some 20 to 50 percent.** Increases in productivity resulting from the use of NPs and PAs vary widely depending on the practice settings, on the responsibilities delegated to these practitioners, on the severity and stability of the patients' illnesses, and on how the physicians choose to use the free time that results from delegating tasks. Although much less information on productivity is available for CNMs than for NPs and PAs, **the degree to which CNMs can substitute for physicians appears to be considerable.**

Indirect evidence indicates these providers could decrease costs to employers and society. Employment levels for NPs, PAs, and CNMs suggest that health-care providers consider these practitioners to be cost-effective substitutes for physicians in delivering many services. From a societal standpoint, training NPs, PAs, and CNMs costs much less than training physicians. **Given that the quality of care provided by NPs, PAs, and CNMs within their areas of competence is equivalent to the quality of comparable services provided by physicians; using NPs, PAs, and CNMs rather than physicians to provide certain services would appear to be cost-effective from a societal perspective.**

## Effects of Changing Payment Methods

Although the evidence indicates that NPs, PAs, and CNMs have made positive contributions to the delivery of health care, **these practitioners have not been used to their fullest potential.** Major obstacles to the greater employment and appropriate use of NPs, PAs, and CNMs are that **most third-party payers do not cover (authorize for payment) the provision by NPs, PAs, and CNMs of many services that are typically and characteristically provided by physicians, and, in those instances where third-party payers do cover**

the services of NPs, PAs, and CNMs, the payments are most often indirect (i.e., to the employing physicians or institutions) rather than direct (i.e., to the NPs or CNMs). PAs have not sought direct payment.

Most NPs, PAs, and CNMs are employed in organized settings where employment is usually not contingent upon coverage. However, the reluctance of some physicians in private practice to hire these practitioners stems partly from uncertainties about payment for their services. NPs and CNMs in independent practices must depend on patients' out-of-pocket payments. Some third-party payers in the public and private sectors cover the services of NPs, PAs, and CNMs (see table 1-1). Coverage and direct payment has been mandated most often for CNMs, and to some extent they have been able to operate with suitable physician collaboration.

**The effects of extending coverage for the services of NPs, PAs, and CNMs and paying directly for the services of NPs and CNMs would undoubtedly be influenced by the markets for their services. The health-care system is currently undergoing substantial changes in the supply of phy-**

sicians and in physicians' practice arrangements. Innovations in methods of paying other providers are multiplying. For example, some third-party payers are paying prospectively for hospitals' inpatient services (e.g., Medicare is paying on the basis of diagnosis related groups<sup>4</sup>), and 'cavitation' is a growing mode of payment. These changes, along with the fact that an increasing proportion of the population is aged 65 or older, and thus in need of significant amounts of health-care services, have major implications for the employment and use of NPs, PAs, and CNMs and for health-care costs. The uncertainty surrounding the markets for the services of NPs, PAs, and CNMs in a health-care system in a state of flux makes it difficult to predict the effect of payment changes.

<sup>4</sup>Diagnosis related groups are groupings of diagnostic categories drawn from the International Classification of Diseases and modified on the basis of surgical procedures, patients' age, significant comorbidities or complications, and other relevant criteria. DRGs are the case-mix measure mandated for Medicare's prospective hospital payment system by the Social Security Amendments of 1983 (Public Law 98-21).

<sup>5</sup>Cavitation payment is prospective payment of a per-capita amount for all services received by an enrollee or beneficiary during a given period.

**Table 1-1.—Coverage and Direct Payment for Services<sup>a</sup> of Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives**

Third-party payer	Nurse practitioners		Physician assistants		Certified nurse-midwives	
	Coverage	Direct payment	Coverage	Direct payment	Coverage	Direct payment
Medicare:						
Part A . . . . .	No	No	No	No	No	No
Part B . . . . .	No	No	No <sup>b</sup>	No	No	No
HMO s <sup>c</sup> . . . . .	Yes	NA	Yes	NA	Yes	NA
State Medicaid programs <sup>d</sup> . . . .	Some programs	A few programs	Some programs	None	Almost all programs	Almost all programs
Medicare and Medicaid:						
Rural Health Clinics. . . . .	Yes	No	Yes	No	Yes	No
CHAMPUS <sup>e</sup> . . . . .	Yes	Yes	No	No	Yes	Yes
FEHBP <sup>f</sup> . . . . .	7 plans	7 plans	6 plans	6 plans	20 plans	20 plans
Private insurance . . . . .	In some States	In some States	No	No	In some States	In some States

NA = not available.

<sup>a</sup>Services that are typically and characteristically provided by physicians.

<sup>b</sup>During the publication of this case study, the Omnibus Reconciliation Act of 1986 (public Law 99-509) was enacted. The act modifies part B of Medicare and authorizes payment for (covers) services of physician assistants working under the supervision of physicians in hospitals, skilled nursing facilities, intermediate-care facilities, and as an assistant at surgery. The payment is indirect and at levels lower than physicians would receive for providing comparable services.

<sup>c</sup>Health maintenance organizations

<sup>d</sup>State Medicaid programs have the option of including NP and PA Services in their State Medicaid Plans. Congress mandated coverage of CNMs' services in 1980.

As of January 1985, all States in which CNMs practiced either were complying with the law (Public Law 96-499) or were considering changes in their Medical plans to comply with the law.

<sup>e</sup>Civilian Health and Medical Program of the Uniformed Services.

<sup>f</sup>Federal Employees Health Benefit Program. FEHBP has 21 fee-for-service plans, some of which authorize Payment to NPs, PAs, and CNMs.

<sup>g</sup>Whether State laws and regulations require or permit insurance coverage and direct payment for the services of NPs, PAs, and CNMs

SOURCE: Office of Technology Assessment, 1986.

The effect of modifying the payment system to cover and allow direct payment for the service of NPs, PAs, and CNMs depends on their employment setting. Such changes could spur the growth of NPs' and CNMs' independent fee-for-service practices and joint practices with physicians, to the extent permitted under State laws and regulations. Because CNMs are currently less limited than NPs by payment limitations of third-party payers, NPs would benefit most from coverage and direct payment.

Even with coverage and direct payment, the number of NPs and CNMs engaging in independent practice should be expected to remain very small. In addition to the restriction imposed by State laws and regulations, there are many difficulties in undertaking such a practice, including high startup costs, obtaining malpractice insurance, and high premium malpractice insurance rates. NPs in independent practices also depend on physician referrals to establish a clientele. Concerns expressed by physicians and the current competitive market suggest that such referrals might not be forthcoming. Independent practices of CNMs are limited by physician concern with competition and difficulty in obtaining physician collaboration and hospital privileges. Although many patients might continue to prefer a physician, direct payment would give patients the choice of a wider range of providers.

**One possible drawback of coverage and direct payment is that additional covered providers might increase the volume of services provided and increase costs to patients and third-party payers.** Although the sparsity of conclusive data makes it difficult to allay this concern, the increasing emphasis most third-party payers place on monitoring the use of services might help control any increase in the volume of services provided.

**Because of their potentially small number, NPs and CNMs in independent practice might not seri-**

**ously affect costs. However, NPs and CNMs in administratively independent practices could potentially lower costs to third-party payers, patients, and society. If the provision of services by NPs, CNMs, and physicians did not increase, and if NPs' and CNMs' payment level were lower than those of physicians for comparable services, lower costs for third-party payers would be likely. If the fees to patients reflected the lower payment levels, costs to patients' and society could be lower. For primary care services, such as office visits, savings to patients would be small, because the fee for the service is small, and because insurance usually covers most of the providers' fees. Savings for maternity care could be important, because the care itself is costly and insurance coverage is incomplete. Patients, third-party payers, and society could have lower costs if the total costs of care provided by these practitioners was lower than the total costs of care provided by physicians for similar medical conditions.**

NPs and CNMs in independent practices would benefit by being able to offer lower prices as a competitive strategy. Individual practice association (IPA)-model health maintenance organizations (HMOs), which contract with individual physicians for services, might turn to NPs as contractors for primary-care services and CNMs as contractors for maternity services. Preferred provider organizations (PPOs), which contract with providers to supply services at discounted fees, might also consider NPs and CNMs as contractors. These developments, however, would be limited by the increasing availability of primary-care physicians (including obstetricians) and other barriers (see box 1-A). Moreover, physicians appear to be engaging in price competition as a result of the changing health-care market.

**How coverage for NPs, PAs, and CNMs would affect their employment and appropriate use by fee-for-service physicians' practices is uncertain, because many variables affect physicians' decisions to employ these practitioners and to dele-**

<sup>7</sup>Such practices would be administratively independent. Administratively independent practices are not clinically independent from physicians when NPs and CNMs are performing delegated medical tasks. In addition to the nursing profession's agreement to clinical collaboration with physicians, State laws and regulations that prescribe the scope of practice of NPs and CNMs and specify requirements for physician supervision serve as a more formal control on clinical independence. NPs and CNMs may legally be clinically independent from physicians when performing nursing tasks.

<sup>8</sup>No direct evidence is available as to how coverage and direct payment would affect the volume of services provided by NPs and CNMs. Although research on physicians' influence on the volume of services has been conducted for many years, none of the studies unequivocally proves the magnitude or even the existence of physicians' ability to control the volume of services (246).

gate tasks commensurate with the training of these providers. If NPs', PAs', and CNMs' services were authorized for payment, some physicians might be encouraged to employ and integrate these providers into their practices, knowing that practices that employ NPs and PAs are better able to offer competitive prices and broader ranges of services than are other practices (17). Some physicians might find it advantageous to hire new physicians, rather than NPs, PAs, or CNMs, because the rate at which physicians' income is growing is decreasing, and new physicians are expressing interest in salaried positions and are willing to work for less money than established physicians earn. Employing physicians, rather than NPs, PAs, or CNMs, might make some practices more competitive, because of the status patients often confer on physicians. Physicians with declining patient bases might not be able to justify taking on additional providers and expenses and might compete by increasing the time spent with individual patients.

**The advantages of extending coverage for NPs', PAs', and CNMs' services in fee-for-service settings is apparent in certain settings, for certain populations and where there are demonstrated shortages of trained personnel.** For example, rapid growth in the elderly population and in the use of nursing-home care has raised concerns about the quality and costs of such care. Not only has



Photo credit: American Nurses Association

Extending coverage for NPs to provide primary care services to elderly nursing home residents would alleviate a demonstrated shortage of trained personnel for that population.

physicians' disinterest in visiting elderly residents of nursing homes (166) been established, but there are very few physicians trained in geriatrics (126). Furthermore the elderly institutionalized population is growing. Although more and better physician care for these patients may be available in the future, their ability to furnish all the health needs of this group is questionable. The geriatric component of many of the training programs of NPs and PAs has been increased and the 1- to 2-year length of NP and PA training programs makes NPs and PAs readily available for providing care. NPs and PAs have the demonstrated ability to provide care for a population with chronic problems and functional disabilities. Coverage would permit NPs and PAs<sup>a</sup> to legally provide the primary care services for which they are trained and licensed—services that many nursing homes find difficult to supply.

If coverage were extended, NPs and PAs would most likely provide nursing home visits as employees of physicians' practices or as team members in group practices to provide nursing-home visits. If NPs were paid directly, they could function as independent practitioners, supplying primary-care services to nursing homes. Except when more intensive care can be substantiated, the Medicare program currently limits the frequency of physicians' visits to nursing homes, so third-party payer costs in this setting might not be affected as long as payment levels were the same for NPs and PAs as for physicians. Total costs to third-party payers would probably decrease because visits to nursing homes by teams of physicians and NPs or PAs would decrease the use of hospital facilities (128,155,257).'

<sup>a</sup>During the publication of this case study, the Omnibus Reconciliation Act of 1986 (Public Law 99-509) was enacted. The act changes the Medicare law and authorizes the coverage of the services furnished by PAs under the supervision of physicians in skilled nursing facilities and intermediate care facilities in States where PAs are legally authorized to perform the services. This provision takes effect Jan. 1, 1987. Payments, which go to the employer are 85 percent of the prevailing charges of physician services for comparable services provided by nonspecialist physicians.

<sup>a</sup>As app. B describes, a number of other Medicare and Medicaid regulations specific to nursing homes limit the roles of NPs and PAs and specify services that must be performed by physicians in order for the nursing homes' services to be covered. In addition to permitting coverage under Medicare and Medicaid, amendments to these regulations would be required in order to encourage the employment and appropriate use of NPs' and PAs' services in this setting.

Coverage for the services of NPs and PAs could also be advantageous for home-bound elderly patients and for allowing pediatric NPs to care for chronically ill children at home. Medical teams of pediatricians and PNPs—with the PNPs providing routine care, teaching children at home, and monitoring the program—have been shown to be effective in minimizing the social and psychological consequences of chronic illness (234). CNMs could be covered for the maternity care of pregnant disabled women, in cases where the disabling condition did not complicate the pregnancy and birth process. Such women might benefit from the individualized care that CNMs typically provide.

Coverage would be advantageous in rural areas where the lack of medical personnel is a persisting problem. Although the Rural Health Clinics Services Act of 1977 extended coverage to NPs, PAs, and CNMs working in rural clinics, not all residents of such areas have access to clinics. Coverage for NPs, PAs, and CNMs might encourage their use by physicians in fee-for-service practices in rural areas who, because of fewer numbers, must see considerably more patients and work longer hours than their urban counterparts. Furthermore, direct payment might encourage qualified NPs and CNMs to move into unserved and underserved areas to expand access to health care.

Competition among health-care organizations and the growth of HMOs—which have employed and used NPs, PAs, and CNMs extensively in the past—augurs larger roles for these providers in the health-care system as employees of HMOs. Cavitation, the method used to pay most HMOs, does not require providers to bill for specific services, and the services provided by NPs, PAs, and CNMs in such settings are, for the most part, al-

ready covered by public and private third-party payers. Thus, **coverage and direct payment for the services of these practitioners would not directly affect their employment by HMOs.**

Such employment might diminish, however, if competition leads physicians to accept salaries that are sufficiently low to entice HMOs to employ physicians instead of NPs, PAs, or CNMs. Another factor that might negatively affect HMOs' employment of these practitioners is the increase in the number of IPA-model HMOs. Because they are primarily organized around physicians who usually practice in private offices, IPA-model HMOs are less likely than are large group- or staff-model HMOs to employ these providers. Although the number of IPA-model HMOs has increased, the group- and staff-model HMOs have the greatest number of enrollees.

The data suggest that NPs, PAs, and CNMs offer financial savings to capitated HMOs. An increasingly competitive environment might encourage providers to pass on to consumers the savings generated by the employment and appropriate use of NPs, PAs, and CNMs, which would benefit society.

Providing **coverage or direct payment for the services of NPs, PAs, and CNMs would not necessarily affect their employment by hospitals for inpatient care.** NPs, PAs, and CNMs who work in hospitals are usually hospital employees, and the hospitals pay their salaries. Furthermore, there is no statutory permission or lack of permission under Medicare or Medicaid for payment of NPs', PAs', or CNM's services as inpatient hospital services when these providers are employed by hospitals. Most other third-party payers are also silent on this issue. With coverage, these services could be billed for as professional services.

## POLICY CONCLUSIONS

NPs, PAs, and CNMs have made important contributions to meeting the Nation's health-care needs by:

- improving the quality and accessibility of health-care services; and

- increasing the productivity of medical practices and institutions.

These practitioners have been accepted in a wide range of settings under many different payment schemes, have the potential to reduce health-care

costs, and clearly play legitimate roles in the health-care system.

Although NPs, PAs, and CNMs are not employed and used to their fullest potential, many third-party payers in the public and private sectors are gradually lowering the barriers presented by current payment methods and coverage restrictions.

Although Federal third-party payers vary considerably in the extent of their coverage of and payment for the services of these providers, in general, coverage and direct payment is limited (see app. B). Federal third-party payers could be more in step with new and evolving payment practices by liberalizing coverage and payment restrictions for the services of NPs, PAs, and CNMs. A major policy question is the manner of liberalizing coverage and policy restrictions. Coverage could be extended for NPs', PAs', and CNMs' services in all settings or only in certain settings. Direct payment for the services of NPs and CNMs would further remove barriers to practice. (PAs have not sought direct payment.)

How extending coverage for the services of NPs, PAs, and CNMs in all settings would affect their employment and use varies on the setting:

- little change would occur in HMOs and inpatient hospital settings; and
- the effect in physician fee-for-service practice settings is unclear.

Coverage for the services of NPs, PAs, and CNMs by additional payers would have little effect on the employment and use of these providers by HMOs or by hospitals for inpatient care. While important changes in employment opportunities could occur in physician fee-for-service practices, the direction of change is not clear because of the large number of variables that affect physicians' decisions. Since the effect on costs is directly related to the extent of employment, this question also remains unanswered.

Extending coverage for NPs', PAs', and CNMs' services in all settings or limiting coverage for their services to certain settings where health-care services are currently inaccessible or inadequate would benefit certain individuals, such as:

- those in certain locales (geographically underserved rural and inner-city areas);
- those in certain settings (e.g., homes and nursing homes); and
- specific populations (e. g., some disabled pregnant women and some chronically ill patients, both adults and children).

Covering the services of NPs, PAs, and CNMs might encourage physician fee-for-service practices to employ these providers and use them in settings and for populations that are not receiving sufficient and adequate care. Because payment would be to employing physicians, physicians would have the final authority for the employment and the exact nature of NPs', PAs', and CNMs' responsibilities. Physicians would have to recognize the advantages of using NPs, PAs, and CNMs in their practices for providing care to underserved and underserved individuals.

Direct payment as well as coverage for services of NPs and CNMs might enable them to develop independent practices in competition with physician practices. Legal and financial restrictions could be expected to keep the numbers of NPs and CNMs in independent practice very small. Competition from an increasing supply of physicians might offset the gains direct payment would bring to the independent practice of NPs and CNMs.

How adding these practitioners, particularly as independent practitioners, to the health-care system, would affect costs cannot be resolved at this time. The suspicion exists that total costs would increase, but data are not available to answer the question. If costs increased due to an increase in the provision of services, volume controls could be instituted.

If the overall volume of services did not increase, and if the NPs' and CNMs' payment levels were lower than physicians' levels for comparable services, third-party payers' costs might decrease. Patients might realize savings from decreases in the fees for some services. The extent of any savings would depend on what payment levels were established. In any event, patients could choose from a wider range of providers and might have greater access to primary-care services.

Direct payment for the services of NPs and PAs could be limited to certain settings where there are demonstrated shortages of primary-or maternity care services. For example, direct payment might be provided to NPs and CNMs who increase geographic access to care. NPs and CNMs in independent practice may prove a viable solution for meeting the health-care needs of sparsely populated areas that cannot support a physicians' practice. However, limiting direct payment to certain areas and populations may not be an efficient cost containment measure because of the potentially small number of independent practices.

It seems clear that coverage for the services of NPs, PAs, and CNMs in at least some settings could improve health care for segments of the population that are not being served adequately. How coverage would affect costs is unclear, but the long-term result could be notable savings. The effect of direct payment on costs is even less certain, but it might enable NPs and CNMs to practice in unserved and underserved areas to expand access to health care.

## ADDENDUM: DEFINITIONS AND DESCRIPTIONS

Descriptions of the general roles of NPs, PAs, and CNMs indicate the similarities and differences of these three types of health practitioners. (See table 1-2 for a comparison of their general characteristics.)

Today's nurse, operating in an expanded role as a professional nurse practitioner, provides direct patient care to individuals, families and other groups in a variety of settings. . . . The nurse practitioner engages in independent decisionmaking about the nursing needs of clients, and collaborates with other health professionals, such as the physician, social worker, and nutritionist in making decisions about other health needs. The nurse working in an expanded role practices in primary, acute, and chronic health care settings. As a member of the health care team, the nurse practitioner plans and institutes health care programs.

—GEMNAC, 1979

The purpose of the physician assistant in primary care is to help the physician provide personal health service to patients under his care. An assistant works with a supervising physician in performing clinical functions and tasks which prior to the mid-1960s were reserved principally if not solely for performance by the physician.

—Allied Health Education Directory, 1985

[Nurse-midwifery practice is] the independent management of care of essentially normal newborns and women, antepartally, intrapartally, postpartally and/or gynecologically [and] occurs

within a health care system which provides for medical consultation, collaborative management, and referral.

—American College of Nurse-Midwives, 1984

PAs differ from NPs and CNMs in their working relations with physicians. PAs always work under physicians' supervision, whereas NPs and CNMs work under physicians' supervision, or in collaborative relationships with physicians and other health professionals. Another major difference lies in the training these practitioners undergo. NPs and CNMs are licensed registered nurses<sup>10</sup> who have received advanced training beyond that of other registered nurses. NPs are trained as generalists in the provision of primary care services. They may choose to specialize at the graduate level and deal with specific populations, as do geriatric or pediatric NPs. CNMs receive advanced training in midwifery. PAs, however, are not required to be registered nurses, and the great majority are not. They come from a variety of backgrounds and experiences before training to become PAs. Most PAs have had 3 or more years of college-level education or several years

<sup>10</sup>Three types of nursing education lead to registered-nurse licenses: 2-year community-college programs; 3-year hospital-affiliated diploma programs; and 4-year baccalaureate-degree programs. The trend to make nursing education more academic and uniform is reflected in the discontinuation of many hospitals' diploma programs, although this has not resulted in an increased demand for baccalaureate education for nurses.

**Table 1-2.—Comparison of Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives**

	Nurse practitioners	Physician assistants	Certified nurse-midwives
Date of first educational program . . . . .	1966	1965	1931
Approximate number trained . . . . .	25,000 to 30,000 <sup>a</sup>	18,116 <sup>b</sup>	3,500 <sup>c</sup>
Approximate number employed in field of training <sup>d</sup> . . . . .	15,433 <sup>e</sup>	16,000 <sup>f</sup>	2,000 <sup>g</sup>
Services . . . . .	Provide medical services within limits of competence; provide counseling and health-promotion services	Provide medical services as assistants to physicians	Provide full range of prenatal, labor, delivery, and postpartum care; family-planning counseling, and gynecological services
Role . . . . .	Provide advanced nursing services, including working with clients having complex or multiple needs; provide medical services in collaboration with physicians and other health providers	Provide medical care under supervision of physicians	Provide midwifery services in consultation with physicians, mainly serve low-risk women; increasingly work administratively independent of physicians
Settings . . . . .	Mainly primary care; trend toward hospitals, long-term care facilities, and other settings	Mainly primary care; trend toward hospitals, long-term care facilities, and other	Hospitals, trend toward birthing centers, health departments, and family planning clinics
Education	Registered nurse with additional training, increasingly at masters level	Special academic and on-the-job training	Registered nurse with additional training, about half at masters level
Approximate average income	\$25,975 <sup>h</sup>	\$27,560 <sup>i</sup>	\$25,000 <sup>j</sup>

<sup>a</sup>Estimated by Denise Gelot, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Public Health Service U.S. Department of Health and Human Services, Rockville, MD, personal communication, Aug 20, 1986

<sup>b</sup>American Academy of Physician Assistants, "AAPA Membership Statistics by Graduation Date," Arlington, VA, May 13, 1986

<sup>c</sup>Estimated by American College of Nurse-Midwives, Washington, DC, personal communication Aug 20, 1986

<sup>d</sup>The figures for NPs and CNMs are from 1980. Later data from the U.S. Department of Health and Human Services, Public Health Service Health Resources and Services Administration, Bureau of Health Professions, Division of Nursing, "1984 National Sample Survey of Registered Nurses," Rockville, MD indicates that the aggregate number of employed NPs and CNMs is 18,642

<sup>e</sup>National Sample Survey of Registered Nurses, November 1980, in "Registered Nurse Population and Overview," U.S. Department of Health and Human Services Public Health Service, Health Research Services Administration, Publication No. HRS-P-OD-83-1, November 1982

<sup>f</sup>Estimated by Gretchen Shafft, American Academy of Physician Assistants, Arlington, VA, personal communication, Sept 15, 1986

<sup>g</sup>Estimate from Kathy Michels, Assistant Director, Congressional and Agency Relations, American Nurses' Association, Washington, DC, personal communication June 17, 1986

<sup>h</sup>U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, Bureau of Health Professions, Division of Nursing, "1984 National Sample Survey of Registered Nurses," Rockville, MD

<sup>i</sup>American Academy of Physician Assistants, 1984 *Physician Assistant Masterfile Survey* (Arlington, VA, 1984)

<sup>j</sup>American College of Nurse-Midwives, Washington, DC, personal communication Aug 20, 1986

SOURCE: Office of Technology Assessment, 1986

of experience in health-related fields, although these are not entrance requirements for the training programs.

Certification is available to all three types of health practitioners and is required for CNMs. Certification is offered to registered nurses by the American Nurses Association, by nurse-specialty associations and by some academic nursing-education programs. An NP can be certified after completing either an NP-master's program or an NP-certificate program. Master's degree programs require applicants to have baccalaureate degrees and registered-nurse licenses, and such programs entail an average of more than a year of additional training. Certificate programs are generally a year long and require registered-nurse licenses. CNMs are certified according to the requirements of the American College of Nurse-Midwives. PAs are

certified by the National Commission of Certification of PAs.

CNMs are trained to provide care for essentially normal expectant mothers and to handle abnormal cases by referring the patients to physicians or by consulting physicians or working jointly with them. Specific functions include providing prepartum care, managing normal deliveries, providing postpartum care, providing gynecological care, providing care to normal newborns and infants, and providing family-planning services.

NPs are taught to perform functions beyond those of traditional nursing and to assume responsibility for some of the care usually provided by physicians (see box I-B). PAs are also trained to provide some of the services typically provided by physicians (see box I-B). PAs are trained in

### Box 1-B.—Functions of Nurse Practitioners and Physician Assistants

#### Nurse Practitioners

The nurse practitioner is the professional nurse trained to provide the full range of primary-care services in the community setting. The American Nurses Association described the NPs' functions referred to in the original Nurse Training Act of 1971 as:

... obtaining a health history; assessing health-related status; entering a person into the health care system; sustaining and supporting persons who are impaired, infirm, or ill and during programs of diagnosis and therapy; managing a medical care regimen for acute and chronically ill patients within established standing orders; aiding in restoring persons to wellness and maximum function; teaching and counseling persons about health and illness; supervising and managing care regimens for normal pregnant women; helping parents in guidance of children with a view to their optimal physical and emotional development; counseling and supporting persons with regard to the aging process; and supervising assistants to nurses (46).

#### Physician Assistants

Physician assistants (PAs) are skilled members of the health-care team who, working dependently with physicians and under their supervision, provide diagnostic and therapeutic patient care (255). They are trained to obtain a patient's medical history, perform comprehensive physical examinations and minor surgical procedures, order and complete routine diagnostic tests, develop diagnostic and management plans, provide basic treatment for persons with common illnesses, and respond appropriately to life-threatening emergencies. PAs are also trained to counsel patients on preventive health-care topics and to facilitate the referral to the community's health and social service agencies when appropriate (20). The curricula of the surgeon's assistant programs are structurally similar to programs for primary care PAs, except they place greater emphasis on clinical and technical skills related to surgical patient care. . . . Surgeon assistants (graduates of specialized training programs) and PAs with training in surgery often act as first or second assistants in major surgery (255).

interpersonal skills, but not to the extent that NPs and CNMs are. Indeed, counseling and health education are traditional dimensions of nursing practice. Although many PAs pursue medical and surgical subspecialties, this study focuses on those PAs who are primary-care practitioners in ambulatory settings.

The roles PAs and NPs play depend on their work settings. In some settings, no functional dis-

tinctions between NPs and PAs exist; in other settings the two types of providers function very differently. NPs, as registered nurses, perform the full scope of nursing practice in addition to performing medical tasks, whereas PAs only perform medical tasks. In reality, NPs and PAs often perform the same roles, and evaluations often focus on NPs and PAs collectively, rather than on either NPs or PAs alone.