
Significance of Medicare and Medicaid Programs for the Practice of Medicine

Darren A. DeWalt, M.D., M.P.H., Jonathan Oberlander, Ph.D., Timothy S. Carey, M.D., M.P.H., and William L. Roper, M.D., M.P.H.

The 1965 legislation that established Medicare and Medicaid declared that the Federal Government would not interfere in clinical medicine. Despite the original intent, Medicare and Medicaid have had tremendous influence on medical practice. In this article, we focus on four policy areas that illustrate the influence of CMS (and its predecessor agencies) on medical practice. We discuss the implications of the relationship between CMS and clinical medicine and how this relationship has changed over time. We conclude with thoughts about potential future efforts at CMS.

“Nothing in this title shall be construed to authorize any Federal officer or employee to exercise any supervision or control over the practice of medicine or the manner in which medical services are provided...” (Public Law 89-97.)

INTRODUCTION

Notwithstanding what Congress wrote in 1965, the Medicare and Medicaid Programs have enormous influence over the practice of medicine. The evolution of medical care, its financing, and the expectations of the American population for high-quality care and rational use of public funds have

linked, irreversibly, CMS to clinical medicine.¹ CMS finances health care for more Americans than any other single entity; the agency has a responsibility to its beneficiaries to ensure that they receive quality, effective, and efficient health care. As with other payers, CMS must answer to both the beneficiaries it serves and the investors (taxpayers); in addition, CMS must address the concerns of an array of political constituents, including Congress, presidential administrations, and groups representing the health care industry. To balance these competing interests and pursue evolving policy goals, CMS has had no choice but to become engaged in the practice of medicine and the delivery of health care services.

Now, 40 years into the life of Medicare and Medicaid, we reflect on how clinical medicine has become intertwined with CMS by highlighting four key policy areas that illustrate this changing relationship: (1) the end-stage renal disease (ESRD) program, (2) the quality improvement organizations and the effectiveness initiative, (3) financing of graduate medical education, and (4) State Medicaid activities. We discuss these policy initiatives, not as an exhaustive listing, but to demonstrate both the broad range of activities that CMS engages in and how those activities have evolved over time as CMS' influence over clinical medicine has increased. CMS' influence stems from both

The authors are with the University of North Carolina School of Medicine. The research in this article was funded by the National Center for Research Resources under Grant Number 5K12RR017667-04. The statements expressed in this article are those of the authors and do not necessarily reflect the views or policies of the University of North Carolina School of Medicine or the Centers for Medicare & Medicaid Services (CMS).

¹ Throughout this article, the current term, CMS, is used to describe the Federal organization responsible for administering Medicare and Medicaid regardless of the historical time point addressed.

regulatory decisions by the policymakers in the agency and from legislative decisions made by the Congress. Both avenues of influence are important and are exemplified in this article. The article concludes with thoughts about the future of CMS' relationship with medical practice.

BACKGROUND

Organized medicine staunchly opposed the passage of Medicare, in part to keep government out of clinical medicine. The American Medical Association (AMA), reversing its initial supportive stance, declared its opposition to compulsory health insurance in 1920 and in subsequent decades became a powerful lobby against enactment of universal health insurance and its political legacy, Medicare (Oberlander, 2003). Precisely because of the opposition to national health insurance, political realities forced policymakers to focus on insuring the elderly and minimizing the regulatory role of Medicare in medical practice. Without conceding to the AMA and limiting the program's regulatory authority, Federal policymakers would have found it much more difficult to gain the medical profession's cooperation in implementing Medicare. Yet this limitation on regulation became untenable within just 5 years of Medicare's introduction; since that time, Federal policymakers have become increasingly involved and influential in clinical medicine.

Because of the weakness of regulatory oversight and the use of unfettered fee-for-service payment in the program's early years, Medicare quickly proved to be a blank check for the health care industry. This payment structure was not unique to the Federal programs since private health insurance plans generally used similarly inflationary arrangements. Medicare's aim was to finance access for the elderly to

mainstream medicine and, in 1965, the mainstream of American medicine showed little concern for cost control or quality oversight.

Indeed, before the 1970s, U.S. health care policy was based on two broad assumptions: (1) Americans needed more medical care, and (2) medical professionals were the best arbiters of the use of health care services (Starr, 1982). Physicians enjoyed virtually unchallenged clinical autonomy. The number of visits or lengths of hospital stays were generally not influenced by the payer; rather, they were determined at the discretion of physicians. This financing policy did not hold physicians or hospitals accountable for decisions made in patient care and no clear standard for over- or underutilization of health services existed. Not surprisingly, then, the use of health services and expenditures skyrocketed in Medicare's and Medicaid's early years. As a result, policymakers' attention quickly turned to reforms that would reign in government spending on health care (though decisive action was slower to take hold).

Evidence suggests that Medicare and Medicaid successfully enhanced access to medical care for low-income and elderly Americans (Davis and Schoen, 1978). But it is unclear whether the expansion of health care utilization in the first few years of Medicare and Medicaid could be attributed mostly to increasing access to and utilization of needed services or to unregulated overuse of health care. Likewise, it is unclear whether Medicare and Medicaid predominantly increased use of inappropriate health care services or, instead, increased, in substantial amounts, both appropriate and inappropriate use. If the latter, one could not argue that Medicare and Medicaid actually changed the practice of clinical medicine, but rather that the programs simply expanded its availability. Regardless, subsequent policy

decisions changed the course of Medicare and Medicaid and undoubtedly influenced medical practice. We turn now to four policy areas that exemplify CMS' evolving relationship with clinical medicine.

ESRD Program

The ESRD program is the only disease-specific coverage ever offered by Medicare. The medical procedure enabling chronic hemodialysis was invented in 1960 and pressure soon grew for Federal funding to insure access to the life-saving treatment; the National Kidney Foundation and a small group of physician kidney specialists spearheaded the lobbying campaign. ESRD was added to Medicare (along with eligibility for disabled persons) in 1972, part of congressional horse trading that gave Senator Long, (Democrat-Louisiana), ESRD in place of the Medicare drug benefit that he had sought to enact. Long advocated catastrophic health insurance as an alternative to comprehensive national health insurance, and saw ESRD as a demonstration of (and prelude to) a universal coverage system based on catastrophic insurance (Nissenson and Rettig, 1999; Schreiner, 2000; and Oberlander, 2003). When national health insurance, through catastrophic coverage or any other model, failed to materialize, ESRD remained in Medicare as the Federal Government's only universal, disease-specific coverage program.

ESRD's contribution to health care is obvious: the program has clearly saved hundreds of thousands of lives. Yet ESRD also represents a significant policy conundrum for Medicare because the numbers of ESRD cases are expected to rise and care for ESRD patients is expensive. In 2002, Medicare spent \$41,696 per ESRD beneficiary, compared with \$6,002 per elderly enrollee (Kaiser Family Foundation, 2005).

With the rapid increase in the prevalence of type II diabetes and the aging of the population, the annual number of new patients entering the ESRD program is expected to increase from 100,359 in 2002 to 460,000 in 2030 (Collins et al., 2005).

The Medicare ESRD program has had an important influence on clinical medicine. Beyond the effect of initiating coverage for ESRD, program developments reveal the close relationship between Medicare and what actually happens in the clinical care of patients on dialysis. Early in the experience of the ESRD program, administrators realized the potential high costs of the program and began to design strategies to contain those costs. For example, outpatient dialysis has been capitated since 1973, and CMS has included more and more services within the capitated payment (Nissenson and Rettig, 1999). As such, dialysis centers have had to become more efficient over time and have used such cost-saving techniques as reusing dialysis filters and using less well trained technicians to administer dialysis (National Kidney Foundation, 1997). Although these steps have been frequently debated, dialysis filter reuse does not appear to increase the risk of adverse outcomes (Port et al., 2001). As payment to dialysis centers over time has stayed level or decreased, the importance of ongoing quality monitoring of dialysis care has increased (Institute of Medicine Committee for the Study of the Medicare End-Stage Renal Disease Program, 1991).

Another example of CMS' effect on clinical medicine was the decision to deny payment for erythropoietin (EPO) if a patient's hematocrit was greater than 36.5. EPO is a naturally occurring protein produced by the kidneys that triggers the production of red blood cells; it improves survival and quality of life among dialysis patients (Eschbach, 1994). Target hematocrit for patients on dialysis is 33 to 36, so it was

thought reasonable to stop administration of EPO when the hematocrit was above this range. However, the policy actually led to more frequent episodes of a hematocrit below 33 as physicians were concerned about reimbursement denial and more likely to withhold EPO therapy for patients in the higher range (Berns et al., 2005; Nissenson and Rettig, 1999). As such, many ESRD patients were not receiving optimal care for their disease. CMS subsequently changed the policy to a cut-point of 37.5 at the urging of Congress and advocates in the renal community (Nissenson and Rettig, 1999). Through these policies, CMS inserted itself into the patient-specific clinical decisions of physicians. This also illustrates how data and analysis can help to inform policy as CMS was able to increase the cut-point based on effectiveness studies (Berns et al., 2005; Nissenson and Rettig, 1999). At the same time as they adjusted the payment rules for dialysis providers, CMS strengthened its oversight and management of dialysis providers and began to pay closer attention to the quality of care provided for ESRD patients.

In 1978, Congress approved the creation of ESRD networks that served to collect data related to the care provided within the network and to initiate quality improvement (Social Security Amendments of 1978) (Public Law 95-292). The networks meet at a national forum each year to share data and ideas for improving quality of care nationally. The ESRD networks have likely had a substantial role in the improvement of care for patients with ESRD and the corresponding decrease in mortality and morbidity (McClellan et al., 2003). Additionally, the improvements made through the ESRD networks have reduced racial disparities in adequacy of hemodialysis (Sehgal, 2003). By recognizing the relationship between financing and quality of care and then cre-

ating a framework for improvement, CMS has participated in improving the clinical care of hundreds of thousands of ESRD patients.

Quality Improvement Organizations and Effectiveness Initiative

In light of skyrocketing costs in Medicare and Medicaid, as well as concerns over fraud and abuse, Congress decided by the early 1970s that closer oversight of the medical care system was necessary. The concern was that excess budgetary costs were related to overuse of medical services, driven by uncontrolled financial incentive systems built into the original legislation. The first attempt to address overuse was the creation of Experimental Medical Care Review Organizations (EMCROs) in 1971 (Bhatia et al., 2000). These organizations reviewed health service use in an effort to improve the quality of care. They were housed at the National Center for Health Services Research, and not at CMS.

EMCROs were the prototype for the professional standards review organizations (PSROs) that were established in 1972. Interestingly, the AMA involved itself in the development of the PSROs because they recognized the potential threat of such organizations to physicians' clinical autonomy (Oberlander, 2003). The AMA proposed that the State medical societies serve as the PSROs, thus leaving control over medical practice within the profession. In the end, Congress agreed with the AMA that physicians should perform the reviews, as they were uniquely suited for the role, but decided that State medical societies would not retain the right to provide this service (Oberlander, 2003). In fact, PSROs were held accountable by Congress and their contracts could be terminated if they were not fulfilling their role adequately.

By the early 1980s, continued frustration with rising program costs led to the development of new payment and monitoring systems that expanded CMS' regulatory authority and influence. A key response to escalating costs was to change regulatory tools, both in terms of payment and clinical oversight. This change was spurred by congressional action in slowing Medicare spending in the context of rising budget deficits. The prospective payment system (PPS), enacted by Congress in 1983, sought to control hospitalization costs by paying hospitals a fixed rate based on the patient's diagnosis during admission (payment was based on diagnosis-related groups) (Social Security Amendments of 1983) (Public Law 98-21). Prior to prospective payment, hospitals and physicians did not have strong financial incentives to provide efficient care. By implementing this strategy, CMS attempted to relate clinical compensation to the resources needed for patient care. The PPS provided a strong incentive for hospitals to provide fewer services during an admission and shorten the length of stay. The role of CMS as regulatory agency became even more important: it had to monitor for both overuse and underuse of appropriate medical care. With the evolving role of these entities, the PSROs were remodeled into the peer review organizations (PROs) (Bhatia et al., 2000).

The initial model of operation for the PRO was similar to that of the PSRO. Structurally, the PROs differed in that they were consolidated into State level regions. Functionally, they still relied on retrospective review of cases and, consequently, delayed education or correction of outlying providers. Physicians often maintained an adversarial relationship with the PROs. Nor did the PROs offer much in the way of tangible results: they did not achieve substantial cost savings or quality improvements (Oberlander, 2003).

The most important paradigm shift in Federal policy regarding quality of care began in the contract period starting in 1993. Taking advantage of quality improvement knowledge from other industries, CMS charged the PROs to develop prospective quality improvement initiatives. This model required a change in the relationship between PROs and the physicians and hospitals they served. The PROs had to develop a cooperative relationship and move away from an adversarial culture (Bradley et al., 2005). The idea was to focus on process improvement and systems based thinking rather than isolating unusual errors (Jencks and Wilensky, 1992). In 2003, better reflecting the evolution of their mission, the PROs were renamed as quality improvement organizations (QIOs). Recent studies have come to differing conclusions regarding the effectiveness of QIOs at improving care (Jencks, Huff, and Cuerdon, 2003; Snyder and Anderson, 2005; Gaul, 2005; Bradley et al., 2005). The question of QIO effectiveness has remained elusive because of the difficulty of conducting rigorous studies that demonstrate cause and effect (Jencks, Huff, and Cuerdon, 2003; Snyder and Anderson, 2005). QIOs clearly give CMS an important tool to influence quality outcomes, and ongoing evaluation of their effectiveness and improvement of that effectiveness is warranted.

In 1988, CMS launched the effectiveness initiative to evaluate and improve the practice of medicine (Roper et al., 1988). Because of the enormous potential for the use of data from large populations to study medical effectiveness, CMS committed itself to refining its data system and to linking with clinical researchers to better understand and analyze the data. As a result, CMS could offer clearer information on the health outcomes achieved from health services in regular practice. This campaign,

started by CMS, became a core function of a sister Federal agency called the Agency for Health Care Policy and Research (now called the Agency for Healthcare Research and Quality) and continues today. CMS has also used the effectiveness initiative to improve the work of the QIOs by helping to inform quality improvement through analysis and interpretation of outcomes data. Through understanding the effects of care and its variation, CMS was in a much better position to educate care providers on quality than it had been previously.

Through activities like the effectiveness initiative and advances in data management, CMS can begin to address the enormous variation in care according to geography (Wennberg, Fisher, and Skinner, 2002). Such variation, which is not associated with differences in outcomes, represents a tremendous opportunity for CMS to control costs. By understanding the patterns of care that yield the best outcomes at the least cost, CMS can begin to use its influence to get physicians to adopt the most efficient models.

The experience of the EMCRO-PSRO-PRO-QIOs and the effectiveness initiative illustrates CMS' changing relationship with clinical medicine. Although the process began as a regulatory model, it has evolved into a quality improvement function with the goal of changing how medicine is practiced. This reflects the evolution of Medicare administration from an initial charge of financing care to its current mission that incorporates concerns of improving the quality of care delivered to program beneficiaries as well as cost control.

Financing Graduate Medical Education

Congress assigned Medicare a role in financing graduate medical education (GME), (Social Security Amendments of

1965) (Public Law 89-97) under the assumption that GME is a public good and should be supported by the Federal Government. As such, CMS helps to shape the quality and size of the workforce of future physicians. Additionally, CMS policy changes have substantial effects on the financial health of America's teaching hospitals.

Before the 1980s, Medicare allowed teaching hospitals to be reimbursed for their reasonable costs, including the cost of GME. In the early 1980s, along with the PPS, Medicare began making direct and indirect medical education payments to teaching hospitals. Direct medical education (DME) payments are intended to offset the actual cost of employing a resident. The indirect medical education (IME) payments offset the higher cost of care at teaching hospitals because of the higher technology, increased testing, and increased severity of illness. Contemporaneous with these payments, residency programs grew. DME funding totaled \$2.6 billion in fiscal year 2002, intended to support the salaries and other direct costs of residents, and IME payments totaled \$6.2 billion in support (Dickinson, 2004). The policy rationale for the indirect payments has been hotly debated, and many believe it should include compensation to hospitals for the greater severity of unmeasured case-mix associated with hospitals with teaching programs.

The number of residents nationally totaled 61,465 in 1980 and 98,076 in 1996. With the Balanced Budget Act of 1997, Congress capped the number of residents eligible for Federal subsidy at 1996 levels (Public Law 105-33[H.R. 2015]). At the same time, Congress began to reign in the IME budget by substantially reducing the additional payment to teaching hospitals. Congress has modified the formulas determining the levels of DME and IME support several times over the past decade,

attempting to reduce any fiscal incentives to increase the number of training slots. Additional reduction in slots reimbursed and further cuts in IME levels have been considered; such possibilities raise great concern for the fiscal health of academic medical centers at a time when the U.S. may face a relative shortage of many specialties (Cooper, 2004; Weiner, 2002). The multiple incentives to use residents to provide clinical services include their low cost, high motivation, and skill levels; their work capacity, despite recently being reduced to 80 hours per week, is still far greater than that likely to be realized from any replacement physician or mid-level provider. The pressures that reductions in GME subsidies generate may influence the quality of education of future physicians. In this case, physicians argue that Congress, through CMS policy, substantially influences the direction of our workforce and the financial health of the institutions that drive innovation in medical care.

Immediately after the 1997 legislative changes, several prominent teaching institutions had substantial financial losses (Coughlan et al., 2000). Since then, teaching hospitals have had increasing difficulty maintaining positive operating margins, which can be partially attributed to the reduction in IME payments (Phillips et al., 2004). Because of the reduced funding of residency positions, as well as the diminished attractiveness of primary care specialties, some programs have closed, (Phillips et al., 2004) and most others have been forced to re-evaluate their mission (Rich et al., 2002). Teaching faculty are often encouraged to participate in activities that are revenue generating rather than focusing on their role as educators for tomorrow's physicians. The Medicare Payment Advisory Commission has issued recommendations to consider GME funding from a purely economic argument

to allow more market-driven changes in GME (Newhouse and Wilensky, 2001), but the proposed market-driven approach may undermine the professional ethos of medicine (Gbadebo and Reinhardt, 2001).

GME financing has substantial influence on the nature of future medical care. By altering GME payment structures or physician fee rates, CMS can dramatically change the medical education of future physicians. The immediate effects relate to actual patient care practices in teaching hospitals by altering the balance of teaching and medical care by the faculty. Long-term effects on the size of the workforce and specialty choice are both inevitable and difficult to predict given past problems in projecting workforce needs, as well as the multiple financial and clinical influences changing the staffing and clinical activities of the nation's academic medical centers.

Unique Role of Medicaid Programs

On the Federal level, Medicare has received much more attention than Medicaid over the past 40 years, a consequence of Medicaid's decentralized administrative structure that gives States primary responsibility for its operations. However, within individual States, Medicaid initiatives have had specific influence on the practice of medicine. We focus here on North Carolina to illustrate how initiatives aimed at improving quality in Medicaid are pursued at the State level.

In North Carolina, the Medicaid Program has been active in promoting quality improvement and efficiency. The State's Department of Health and Human Services has fostered the development of Community Care of North Carolina which convenes networks of primary care providers to coordinate the care of populations of patients (Ricketts et al., 2004). These networks support local

disease management and case coordination for Medicaid enrollees, and member physicians agree to participate in network activities and to follow network guidelines for the care of specific chronic illnesses. An evaluation of this program revealed that, compared with the standard Medicaid Program within the State, the Community Care of North Carolina program saved money for the State and improved some outcomes for patients (Ricketts et al., 2004). Other States have implemented different models of disease management with varying levels of success, and all with the intent of improving health outcomes while controlling costs (Wheatley, 2001).

In partnership with the Center for Children's Healthcare Improvement (CCHI), the North Carolina Medicaid Program has also demonstrated several improvements in care delivery. Much of the work has focused on care for children, and working with practices on quality improvement, the CCHI and Medicaid have documented improvements in preventive services (Margolis et al., 2004), care for patients with asthma (Schmid 2004), and reduced waiting times to see physicians (Bundy et al., 2005). By supporting the infrastructure for such collaborative efforts, the State has enabled practices to improve the timeliness of care and also to reduce the rate of no-shows to clinic appointments.

Despite the successes seen in North Carolina and some other States, Medicaid Programs face constraints in pursuing quality initiatives. Because of State budget problems, policymakers frequently do not have the resources needed to administer adequately such programs, much less lead quality improvement efforts. In addition, the information systems and data analysis capabilities developed under Medicare are not available for most Medicaid Programs and decisions on effectiveness are less well informed.

Implications of Involvement in Clinical Medicine

We have outlined selected examples of how Medicare and Medicaid have influenced clinical medicine. Medicare and Medicaid emerged from a fierce political process in 1965 with the charge to stay away from clinical medicine. Early on, however, Federal administrators recognized that Medicare and Medicaid could not control costs or ensure quality without regulation. As regulation developed, it took several years for the Federal Government to adopt the strategy of prospective quality improvement through partnership with the medical community. This strategy has much promise for improving medical care.

Was it a mistake for CMS to engage in changing clinical practice? We decided, as a country, to create a safety net of public health insurance for the elderly and the poor. Like every other payer in the country, CMS was responsible to those who pay for the services (the American taxpayer) and those who receive care under their auspices (Medicare beneficiaries and Medicaid enrollees). The American taxpayer, through Congress, should have oversight of the care provided by those who invoice CMS and, therefore, receive public funds. CMS and Congress have the responsibility of ensuring the best quality of care possible for program beneficiaries. Additionally, because CMS is the largest single insurance organization in the Nation, its initiatives are likely to shape policy well beyond its programs, in the commercial market in the United States and even abroad. Eliminating CMS influence from clinical medicine would not only be infeasible, it would be a tremendous opportunity lost.

We anticipate that CMS will continue its role to improve health care quality by informing clinical care with data, taking a

larger role in chronic disease management, and developing new systems that reward high quality care. Data technology will now allow analysis of close to real-time data and linkage of inpatient, outpatient, and pharmacy databases to facilitate more rapid cycles in quality improvement. CMS' most recent initiative for the QIOs will actively help physician practices to adopt electronic health records (*Medicare News*, 2005). In addition to the inpatient efforts noted, CMS also participates with the Ambulatory Care Quality Alliance, along with other insurers and major physician organizations, to advance quality in outpatient care settings. And CMS has embarked on large-scale demonstration projects to determine whether pay-for-performance and disease management programs can save money and improve quality. All these programs reflect the growing partnerships between CMS and hospitals and physician organizations. It has taken almost 40 years to develop these types of relationships across American health care, but such partnerships now have the potential to yield substantial benefits in the health care system.

Future Efforts at CMS

We can identify four key areas that CMS should address in the coming years with respect to influencing clinical medicine. First, CMS must successfully implement the Medicare Modernization Act (MMA). Second, CMS should devote more resources toward understanding the appropriate role for the Medicaid Program and how the Nation finances care for the most vulnerable segments of society. The States have conducted many experiments with payment and disease management, and CMS should facilitate sharing the lessons learned. Third, CMS should improve and develop close collaboration with other private insurers to enable the pooling of data

and cooperative improvement of care. And fourth, CMS can lead by changing the paradigm of financing medical care based on acute care to one that pays for chronic illness care.

The MMA authorized several key programs that will enhance the quality of medical care for the elderly in the U.S. Of particular note is the emphasis on chronic disease management programs. Our entire health care system has struggled with how to retool to care for patients with chronic disease rather than acute illness. CMS is directly assessing the effect of disease management programs operated outside of routine clinical care settings. Other movements across the country are trying to remodel the clinical care system from within to provide better chronic illness care (Casalino, 2005). Regardless of the model used, these strategies have promise for improving quality and reducing costs by changing the way physicians and their practices care for their patients.

Over the past 40 years, Federal administrators have focused more attention on the Medicare Program than on Medicaid. Nonetheless, Medicaid today is a far different—and dramatically larger—program than it was in its early years, and, as its enrollment has expanded, eligibility is no longer as tightly connected to welfare status as it was at Medicaid's start. The unique nature of the Federal-State partnership for Medicaid has led to substantial diversity in program operations, including eligibility levels and delivery systems, across the States. The local infrastructure and efficiency of a State-based program remains attractive, but translation of innovation from one State to the next has been slow. Moreover, although a few States have used Medicaid expansions to reduce significantly their rates of uninsurance, most States have lacked the financial capacity and political will to follow their lead. In

its role overseeing the State programs, CMS should continue to push the States to expand coverage and improve quality in Medicaid, although the financing challenges will be substantial. Additionally, rapid availability of State Medicaid data, similar to the planned rapid availability of Medicare data, will facilitate cross-State comparisons. We see great opportunities for expanding the role of Medicaid in working to improve quality of clinical care across the Nation.

CMS also will need to consider its role as a convener of private industry to advance data use to improve medical care. In this area, data aggregation and analysis should expand to include data from Medicaid and private insurance companies. Providers of medical care in America answer to a large number of different payers that all collect data on patients. Those data are rarely aggregated to inform public policy or individual clinical care. CMS can take a leadership role to expand health information systems and the use of data in routine clinical care. CMS will need to work with the Agency for Healthcare Research and Quality and private insurance companies to accomplish this goal.

Private and public health insurance financing emerged in an era in which most of medicine was focused on care for acute illnesses. Largely because of the successes in acute care and resultant rises in longevity, a large share of the current health care dollar is now spent on patients with chronic illnesses. The optimal care for chronic illness requires a comprehensive approach that includes self-management support, community resources, decision support, information systems, and a redesigned delivery system (Wagner, 1998). Such a model of care requires creative financing strategies to motivate high quality care. For example, ensuring access to self-management support (education, telephone,

and E-mail consultation) will require a different financing structure (Spann, 2004). Current demonstrations in chronic disease management and pay-for-performance are a start, but our health care system has a long way to go before incentives are aligned to support chronic illness care.

CONCLUSION

CMS policy has tremendous influence on clinical medicine. Although the initial statutes declared otherwise, it did not take long to show that regulation was a key component for ensuring and promoting quality. CMS policy has evolved over the years to now focus on quality improvement and partnerships across governmental agencies and private industry. CMS should continue to pursue its responsibility for providing access to needed care and ensuring quality. As such, we expect CMS will continue to provide further incentives for high quality care and to invest resources toward improving substandard care. By pursuing this agenda, we believe that CMS can apply appropriate tools to implement the MMA, devote more attention to Medicaid, work with private industry to develop the data infrastructure to move medical care forward, and change the paradigm in financing to support chronic illness care.

ACKNOWLEDGMENTS

We would like to thank John Spiegel and Kathleen Lohr for helpful comments on a draft of this manuscript.

REFERENCES

Berns, J.S., Fishbane, S., Elzein, H., et al.: The Effect of a Change in Epoetin Alfa Reimbursement Policy on Anemia Outcomes in Hemodialysis Patients. *Hemodialysis International* 9(3):255-263, 2005.

- Bhatia, A.J., Blackstock, S., Nelson, R. et al.: Evolution of Quality Review Programs for Medicare: Quality Assurance to Quality Improvement. *Health Care Financing Review* 22(1):69-74, Fall 2000.
- Bradley, E.H., Carlson, M.D., Gallo, W.T., et al.: From Adversary to Partner: Have Quality Improvement Organizations Made the Transition? *Health Services Research* 40(2):459-476, April 2005.
- Bundy, D.G., Randolph, G.D., Murray, M., et al.: Open Access in Primary Care. *Pediatrics* 116(1):82-87, 2005.
- Casalino, L.P.: Disease Management and the Organization of Physician Practice. *Journal of the American Medical Association* 293(4):485-488, January 26, 2005.
- Collins, A.J., Kasiske, B., Herzog, C., et al.: Excerpts from the United States Renal Data System 2004 Annual Data Report: Atlas of End-Stage Renal Disease in the United States. *American Journal of Kidney Diseases* 45(1):A5-A7, 2005.
- Cooper, R.A.: Weighing the Evidence for Expanding Physician Supply. *Annals of Internal Medicine* 141(9):705-714, November 2, 2004.
- Coughlan, J.R., Daley, D.C., Ibrahim, T., et al.: Why Medicare Supports Graduate Medical Education. *The American Journal of Medicine* 109(6):516-521, 2000.
- Davis, K. and Schoen, C.: *Health and the War on Poverty: A Ten-Year Appraisal*. Brookings Institution Press. Washington, DC. 1978.
- Dickinson, T.A.: The Future of Financing Medical Education: Questions about Medicare's Role. *American Journal of Medicine* 117(4):287-290, August 15, 2004.
- Eschbach, J.W.: Erythropoietin: The Promise and the Facts. *Kidney International Supplement* 44:S70-76, January 1994.
- Gaul, G.M.: Once Health Regulators, Now Partners. *Washington Post* p.A1, July 26, 2005.
- Gbadebo, A.L. and Reinhardt, U.E.: Economists on Academic Medicine: Elephants in a Porcelain Shop? *Health Affairs* 20(2):148-152, March/April 2001.
- Institute of Medicine Committee for the Study of the Medicare End-Stage Renal Disease Program: *Kidney Failure and the Federal Government*. National Academy Press. Washington, DC., 1991.
- Jencks, S.F., Huff, E.D., and Cuerdon, T.: Change in the Quality of Care Delivered to Medicare Beneficiaries, 1998-1999 to 2000-2001. *Journal of the American Medical Association* 289(3): 305-312, January 15, 2003.
- Jencks, S.F. and Wilensky, G. R.: The Health Care Quality Improvement Initiative. A New Approach to Quality Assurance in Medicare. *Journal of the American Medical Association* 268(7):900-903, August 19, 1992.
- Kaiser Family Foundation: *Medicare Chartbook* (3rd ed.). Henry J. Kaiser Family Foundation. Menlo Park, CA. Summer 2005.
- Margolis, P.A., Lannon, C.M., Stuart, J.M., et al.: Practice Based Education to Improve Delivery Systems for Prevention in Primary Care: Randomized Trial. *British Medical Journal* 328(7436):388-393, February 14, 2004.
- Medicare News: *Medicare Takes Major Step Toward Improving Quality of Care*. 2005. Internet address: <http://www.cms.hhs.gov/media/press/release.asp?Counter=1421> (Accessed 2005.)
- McClellan, W.M., Frankenfield, D.L., Frederick, P.R., et al.: Improving the Care of ESRD Patients: a Success Story. *Health Care Financing Review* 24(4):89-100, Summer 2003.
- National Kidney Foundation Report on Dialyzer Reuse: Task Force on Reuse of Dialyzers, Council on Dialysis. *American Journal of Kidney Diseases* 30(6):859-871, December 1997.
- Newhouse, J.P. and Wilensky, G.R.: Paying for Graduate Medical Education: the Debate Goes On. *Health Affairs* 20(2):136-147, March/April 2001.
- Nissenson, A.R. and Rettig, R.A.: Medicare's End-Stage Renal Disease Program: Current Status and Future Prospects. *Health Affairs* 18(1):161-179, January/February 1999.
- Oberlander, J.: *The Political Life of Medicare*. University of Chicago Press. Chicago. 2003.
- Phillips, R.L., Jr., Fryer, G.E., Chen, F.M., et al.: The Balanced Budget Act of 1997 and the Financial Health of Teaching Hospitals. *Annals of Family Medicine* 2(1):71-78, January 1, 2004.
- Port, F.K., Wolfe, R.A., Hulbert-Shearon, T. E., et al.: Mortality Risk by Hemodialyzer Reuse Practice and Dialyzer Membrane Characteristics: Results From the USRDs Dialysis Morbidity and Mortality Study. *American Journal of Kidney Diseases* 37(2):276-286, February 2001.
- Public Law 89-97: Social Security Act, Title XVIII. Section 1801. [42 U.S.C. 1395]
- Rich, E.C., Liebow, M., Srinivasan, M., et al.: Medicare Financing of Graduate Medical Education. Intractable Problems, Elusive Solutions. *Journal of General Internal Medicine* 17(4): 283-292, 2002.

- Ricketts, T.C., Greene, S., Silberman, P., et al.: *Evaluation of Community Care of North Carolina Asthma and Diabetes Management Initiatives: January 2000-December 2002*. Cecil G. Sheps Center for Health Services Research. Raleigh, NC. 2004.
- Roper, W.L., Winkenwerder, W., Hackbarth, G.M., et al.: Effectiveness in Health Care. An Initiative to Evaluate and Improve Medical Practice. *New England Journal of Medicine* 319(18):1197-1202, November 3, 1988.
- Schmid, D.: *Prevalence of Children with Chronic Asthma and their Use of Health Care Services: A Comparison of Carolina ACCESS I Provider Practices Within and Outside of the NC DMA Asthma Collaborative*. North Carolina Division of Medical Assistance. November 2004. Internet address: http://www.dhhs.State.nc.us/dma/ca/asthma_report.pdf (Accessed 2005.)
- Schreiner, G.E.: How End-Stage Renal Disease (ESRD)-Medicare Developed. *American Journal of Kidney Diseases* 35(4 Suppl 1):S37-44, April 2000.
- Sehgal, A.R.: Impact of Quality Improvement Efforts on Race and Sex Disparities in Hemodialysis. *Journal of the American Medical Association* 289(8):996-1000, February 26, 2003.
- Snyder, C. and Anderson, G.: Do Quality Improvement Organizations Improve the Quality of Hospital Care for Medicare Beneficiaries? *Journal of the American Medical Association* 293(23):2900-2907, June 15, 2005.
- Spann, S.J.: Report on Financing the New Model of Family Medicine. *Annals of Family Medicine* 2 (Suppl3): S1-21, December 2, 2004.
- Starr, P.: *The Social Transformation of American Medicine*: Basic Books. New York. 1982.
- Wagner, E.H.: Chronic Disease Management: What Will it Take to Improve Care for Chronic Illness? *Effective Clinical Practice* 1(1):2-4, 1998.
- Weiner, J.P.: A Shortage of Physicians or a Surplus of Assumptions? *Health Affairs* 21(1):160-162, January/February 2002.
- Wennberg, J.E., Fisher, E.S., and Skinner, J.S.: Geography and the Debate Over Medicare Reform. Web Exclusive. *Health Affairs* W96-114, February 13, 2002. Internet address: <http://content.healthaffairs.org/cgi/content/abstract/hlthaff.w2.96v1> (Accessed 2005.)
- Wheatley, B.: Medicaid Disease Management: Seeking to Reduce Spending by Promoting Health. *State Coverage Initiatives*. 2001. Internet address: <http://www.Statecoverage.net/pdf/issuebrief0801.pdf> (Accessed 2005.)

Reprint Requests: Darren A. DeWalt, M.D., M.P.H., University of North Carolina School of Medicine, Department of Medicine, 5039 Old Clinic Building, CB#7110, Chapel Hill, NC 27599. E-mail: dewaltd@med.unc.edu