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Using Medicare data to assess nurse practitioner–provided care

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ABSTRACT

Background: To mitigate shortages of primary care physicians and ensure access to health care services for a growing number of Medicare beneficiaries, some policy makers have recommended expanding the supply and roles of nurse practitioners (NPs). Little is known about the number of NPs billing Medicare or their practice patterns.

Purpose: This study examines the geographic distribution and county characteristics of NPs billing Medicare, compares the types and quantities of primary care services provided to Medicare beneficiaries by NPs and primary care physicians, and analyzes the characteristics of beneficiaries receiving primary care from each type of clinician.

Methods: We performed a cross-sectional analysis of 2008 Medicare administrative data from 959,848 aged and/or disabled beneficiaries continuously enrolled in fee-for-service Medicare during the study period. Outcome measures included geographic distribution of NPs measured by the rate of NPs per 1,000 Medicare beneficiaries by state, average utilization, and patient characteristics.

Discussion: States with the highest rate of NPs billing were rural. Over 80% of the payments received by both NPs and primary care physicians were for evaluation and management services. Beneficiaries assigned to an NP were more likely to be female, to be dually eligible for Medicare and Medicaid, and to have qualified for Medicare because of a disability. NPs with assigned beneficiaries were significantly more likely than similar primary care physicians to practice in federally designated primary care shortage areas.

Conclusions: Approximately 45,000 NPs were providing services to beneficiaries and billing under their own provider numbers in 2008. Aspects of NP practice patterns were different from primary care physicians, and NPs

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appeared more likely to provide services to disadvantaged Medicare beneficiaries.

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The United States faces a serious shortage of primary care clinicians at a time when demand for health care services is expected to rise (PwC, 2012; Aiken, 2011; Association of American Medical Colleges Center for Workforce Studies, 2008; Ku, Jones, Shin, Bruen, & Hayes, 2011; Staiger, Auerbach, & Buerhaus, 2009; West & Dupras, 2012; World Health Organization, 2012). To mitigate shortages of primary care physicians and help ensure adequate access to primary care, particularly in underserved communities, the Medicare Payment Advisory Commission, the Institute of Medicine, and others have recommended expanding the supply and roles of nurse practitioners (NPs) (Cooper, 2007; Elsom, Happell, & Manias, 2009; Fairman, Rowe, Hassmiller, & Shalala, 2011; Iglehart, 2008; Institute of Medicine, 2011; Medpac, 2008; Naylor & Kurtzman, 2010; United States Government Accountability Office, 2008). These recommendations rest largely on the assumption that NPs provide services that can serve as a substitute for primary care physicians, a view reflected in 1986 when the Office of Technology Assessment conducted the first major review of evidence on comparisons of care and concluded that "NPs performed as well as physicians with respect to patient outcomes, proper diagnoses, management of 'indicator' medical conditions, frequency of patient hospitalization, and patient satisfaction" (U.S. Congress, Office of Technology Assessment, 1986).

In the 25 years since the Office of Technology Assessment report, the number of NPs has steadily increased, accelerating more rapidly in the late 1990s after amendments to the Social Security Act enabling NPs to directly bill Medicare at 85% of physician fees (Balanced Budget Act of 1997, 1997; Bureau of Health Professions, HRSA, HHS, 2011; Health Resources and Services Administration, 2010; Spratley, Johnson, Sochalski, Fritz, & Spencer, 2002). Over this same period, many states modified regulations that control the scope of NP practice, with some states permitting NPs to practice independently of physicians. Currently, 16 states and the District of Columbia permit NPs to practice and prescribe medications without physician oversight, and 7 require physician oversight for prescribing only (Pearson, 2012).

Despite the expansion in the size and roles of the NP workforce, debates linger over the degree to which NP-provided primary care services act as substitutes or complements for care provided by primary care physicians. Much of the research on care provided by NPs is dated, and these studies, although rigorous and informative, often focused on a single site of care or a specific disease (Brooten et al., 2002; Dierick-van Daele, Metsemakers, Derckx, Spreeuwenberg, & Vrijhoef, 2009; Horrocks, Anderson, & Salisbury, 2002; Mundinger et al., 2000). Generating broad-based empirical evidence that addresses this debate will better inform NPs, primary care physicians, and workforce policy makers as they formulate options for improving the delivery of primary care in an era of health reform.

One potential area for research that has not been fully explored is the usefulness of examining Medicare administrative data to assess NP-provided care. This methodology, which has been used extensively to analyze physician care, presents a unique challenge when examining NP care in that it is not possible to "see" all NP-provided care in the data because of billing that is "incident to" (i.e., claims for NP provided care that are billed under a physician number) (Bach, Guadagnoli, Schrang, Schussler, & Warren, 2002; Chang, Stukel, Flood, & Goodman, 2011; Fisher et al., 2003; Jencks, Huff, & Cuerdon T., 2003; McGlynn et al., 2003). Incident to billing allows a practice to be reimbursed by Medicare at 100% of the prevailing rate for services provided by an NP if the physician gives direct care to initiate the course of treatment, if the physician is in the office suite while the service is being provided, and if the physician is immediately available for assistance if needed. Although incident to billing adds an additional complication to using Medicare data to assess NP-provided care, the data are still likely to provide a rich source of information on the services NPs are most often providing to beneficiaries. The data can also be used to profile where and in what types of communities NPs are practicing, and the characteristics of the beneficiaries they care for (all information that is currently missing at the national level).

In this study, we analyzed Medicare administrative data to (a) identify the number and geographic distribution of NPs billing Medicare under their own billing number; (b) examine differences in characteristics of the counties in which NPs and primary care physicians practice to determine whether NPs are more likely to practice in poor, rural, or underserved communities; (c) examine the types, quantities, and billings of primary care services provided to Medicare beneficiaries by NPs and compare them with primary care physicians; and (d) compare the demographic characteristics and diagnostic profile of beneficiaries who received primary care services from NPs with beneficiaries receiving care from primary care physicians.

Methods

Data Source

The data source for this study was 2008 Medicare Part A and B billing records, inclusive of all aged and disabled