CHRONIC DISEASE MANAGEMENT: IMPROVING OUTCOMES, REDUCING COSTS

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Abstract

The relationship between poverty and poor health are strikingly apparent in the United States. People living below the federal poverty line have a shorter life expectancy and higher incidence of chronic disease than those with higher incomes. The poor, however, are less likely than the non-poor to have recent contact with a physician or engage in preventive care. This article discusses the significance of chronic disease management in improving health outcomes for low-income individuals and in reducing preventable health-related expenditures from a provider perspective. The article concludes with a discussion of the role of community health and social workers in coordinating care between providers and poor patients.

According to data from the 2001-2005 National Health Interview Survey (NHIS), poor children, defined as those living at or below the federal poverty level, are more likely than other children to suffer chronic health problems (Currie and Lin 2007). Conditions such as asthma and diabetes require regular monitoring to prevent the disorders from progressing to life-threatening levels. Chronic disease management, therefore, is essential to both improving health outcomes of poor individuals and containing costs in the United States health care system.

In order to implement adequate chronic health management, and to do so in a cost-effective way, health care providers serving a high percentage of low-income patients should utilize community health workers to coordinate care. In addition, basic low-cost structural changes to appointment scheduling systems should be revised so that clinic appointments are more accessible to poor patients.

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Chronic disease management requires individuals to be knowledgeable about the trajectory of their disease so that the patient and family members are able to identify abnormal symptoms. In this model, affected individuals are expected to comply with physician-ordered regimens for care, such as the taking of daily medications (Gellad et al. 2011). The goal of chronic disease management is to help patients self-identify an irregularity before the condition progresses to a life-threatening or highly debilitating level. In order to monitor the disease, chronically ill individuals are expected to have a regular health care provision team that understands the patient's unique medical and social history (Wagner 2000). As a result of having a provision team, the lead physician is able to work with the patient to maintain wellness through routine appointments even if the patient is not experiencing problematic symptoms. Collecting a social history and educating the patient are essential aspects of chronic disease management (Wagner 2000). Patients who understand their disorder, monitor their symptoms, and comply with prescribed regimens through the assistance of integrated care teams are more likely to receive higher quality care (Ouwens et al. 2004). Therefore, it is important that the medical team is integrated with social workers or community health workers who are acutely aware of the conditions of poverty that may impact a patient's ability to manage an illness.

Disease management can increase quality of life for the patient, but hospitals and physicians are also key beneficiaries of a chronic disease management approach. From the physician's perspective, it is advantageous to regularly interact with individuals at risk for developing complex symptoms. More closely understanding the patient's condition helps providers to identify abnormalities before they progress to dangerous, complex, and ultimately untreatable levels. It is useful for the medical team to also understand the patient's social environment as one's location in society may impact the ability to follow through with treatment plans. Finally, hospital systems are also likely to monetarily benefit from disease management, as "charity cases," i.e., poor individuals lacking adequate health insurance coverage, are less likely to require costly hospital admission. In addition, due to disease management, profitable higher acuity cases can replace less acute cases (Woods et al. 2011).

While the benefits of chronic disease management are numerous, the implementation of this model of care provision is currently flawed, especially with regard to low-income, inner-city patients. Adequate disease control requires that a patient have a regular health-care provider who coordinates and co-manages care, thereby preventing the patient's hospitalization. Unfortunately, however, poor individuals receiving health insurance through public aid programs, such as Medicaid or the State

Children's Health Insurance Program (SCHIP), often have high "no-show" rates for medical appointments, which disrupts continuity of care.

BARRIERS TO CHRONIC DISEASE MANAGEMENT

A "no-show" is defined as a patient who misses a scheduled appointment with a medical provider and does not call ahead to cancel or reschedule the appointment (Daggy et al. 2010). Missed appointments are detrimental for patients because chronic illnesses often require vigilant measurements to assess the progression of the disease, routine appointments are often needed in order to fill prescriptions (Gellad et al. 2011), and a key to chronic disease management is patient education and communication (Wagner 2000).

Missed appointments impact physicians and health providers who receive compensation only for those patients who attend an appointment. In the United States, the estimated cost of "no-shows" accounts for 3% to 14% of total outpatient clinic income (Lee et al. 2005). Moreover, the physician is likely to miss the opportunity to schedule another appointment during this time slot. In addition to financial burdens, missed appointments might aggravate medical providers from a social perspective. For example, if a higher number of patients who are on public aid as compared to privately insured patients seem to be no-shows, medical teams might develop negative assumptions and stereotypes about public aid populations. Providers' internalized beliefs about public aid patient patterns might negatively impact the quality of care or access to care that such populations receive. In order to prevent these outcomes, understanding and redressing the underlying causes of missed appointments without prior cancellation is essential for implementing effective chronic disease management.

Frequently stated reasons for no-shows include: forgetfulness, transportation issues, lack of childcare, conflict with work, staff scheduling error, parent incarcerated, language barrier, or illness affecting other family member (Lacy et al. 2004; Melnikow and Kiefe 1994; Pesata, Pallija and Webb 1999; Stone et al. 1999). It is important to understand how these factors contribute to chronic illness among the poor (Currie and Lin 2007).

Forgetfulness would appear to be a factor unrelated to socioeconomic standing. But poor patients with unreliable phone service or irregular access to phones may not enjoy the advantage of a health care provider's reminder about an upcoming appointment. Transportation and its attendant costs seems more likely to be related to income level. Poor patients are less likely to own cars (Ong 2002) and taxicabs may be less likely to pick up customers in neighborhoods of concentrated poverty. Even if a car is owned, the cost of gas and parking can both act as barriers for low-income patients.

IMPROVING APPOINTMENT ATTENDANCE

To increase rates of appointment attendance, clinics and private practices that treat chronically ill individuals should encourage patients to provide a variety of contact information. These data should include phone numbers (fixed line and cell) and email address, as well as the contact information of at least one family member or friend who is able to locate the patient if he or she is having difficulties with their personal phone lines.

The format of patient reminders is also important in contributing to the continuity of care as clinic staff reminders significantly reduce the no-show rate compared to automated reminders (Parikh et al. 2010). Multilingual individuals could be hired to conduct reminder phone calls where applicable. Using email to send reminders might serve as a low-cost, supplementary means to remind patients of upcoming appointments since contemporary research indicates that low-income individuals have significant access to technology such as the Internet (Ancker et al. 2011).

In addition to revamping methods for reminding low-income, chronically ill patients about appointments, it is useful to determine the optimum time period for scheduling an appointment in order to reduce forgetfulness. Scheduling an appointment 21 to 7 days in advance may reduce the incidence of appointments booked excessively far out or too close, both which can contribute to the likelihood of no-shows (Lee et al. 2005). Finally, at the structural level, simply opening a toll-free telephone line exclusively reserved for appointment cancellations might reduce the financial burden of no-shows on the medical providers. The cancellation number should be easy for patients to memorize.

There are some common techniques used by medical providers to discourage missed appointments, but many of these have proven ineffective. For instance, charging patients a fee for missed appointments or using other forms of disincentives does not reduce the rate of no-shows (Chariatte et al. 2008). Instead of a strategy of deterrence, health care providers can utilize incentives for their patients on public aid. Whether in the form of parking vouchers or easing the use of public transit, health care providers can make it easier for patients to get to the appointment. For instance, the simple act of providing bus passes proved effective in improving the rate of appointment compliance (Melnikow, Paliescheskey and Stewart 1997). Health care providers unable to distribute transportation passes to all public aid patients can take advantage of government-funded programs that seek to reduce transportation difficulties. Some states provide free transportation services to non-emergency, routine medical appointments for Medicaid patients. Moreover, providing public aid patients with contact information about the transportation services available may help to reduce the rate of no-shows. Evidence indicates that the psychosocial impact of simply being

offered transportation support from medical staff may in fact contribute to improved attendance rates since patients may feel the staff effort highlights the need to attend the next appointment (Marcus 1992).

THE ROLE OF COMMUNITY HEALTH AND SOCIAL WORKERS

A strong social service team includes a social worker and several community health workers (CHWs). Together they can strengthen the chronic health management and continuity of care for poor individuals. Medical social workers are important actors in the medical provision teams. They not only recruit, train, and supervise CHWs, they also ensure that adequate services are provided and, in conjunction with physicians, identify patients likely to benefit from the services of a community health worker.

Community health workers, who are not required to hold advanced degrees, operate under the supervision of a licensed social worker. According to the Patient Protection and Affordable Care Act of 2010, a CHW is “an individual who promotes health or nutrition within the community in which the individual resides” (5313). Recruiting CHWs from within the community to manage chronic disease is expected to not only help low-income patients overcome the sociocultural barriers that can limit their access to healthcare, but also to empower community members to promote collective neighborhood wellness.

In order to accomplish the goal of wellness promotion, CHWs provide low-income patients with culturally and linguistically appropriate education about the nature of their chronic disease. They enhance effective communication and coordination between patients and the care provider. They seek to promote patient adherence to care by engaging in regular home visits and phone calls to the affected individual.

Medical providers are incentivized to utilize the services of community health workers through federal, state, local, and private grant funding. For example, section 5313 of the Patient Protection and Affordable Care Act of 2010 is entitled “Grants to Promote the Community Health Workforce” and provides interested medical providers with the necessary financial resources to recruit, train, and financially compensate these valuable workers.

The government’s investment in community health workers has been driven by the evidence-based successes of these professionals in controlling chronic diseases among low-income individuals. For example, a study at the Children’s Hospital Boston, the top-ranked children’s hospital in the United States, attributed the utilization of CHWs in an asthma initiative program to a 64% reduction in pediatric asthma-related emergency department visits (Bramwell 2011). In addition, the program was found to

significantly reduce hospital costs with a return on investment (Woods et al. 2011). In this program, CHWs helped to manage this chronic condition by educating parents about asthma triggers and reminding patients to attend appointments and ultimately to follow through with health plans. In addition, CHWs played a significant role in linking low-income patients to resources such as transportation services to help reduce barriers to treatment compliance.

CONCLUSION

Chronic disease management based on preventive health-care coordination may be said to represent the future of health-care delivery in the United States. This model of illness management in which individuals are encouraged to monitor their condition through regular contact with health provision teams may prove to be especially valuable for low-income individuals. Chronic disease management is significant because it is cost-effective from the provider, patient, and hospital system perspective. Perhaps more importantly, this model of care delivery is likely to improve the health outcomes of low-income populations struggling to manage chronic illness progression for diseases such as asthma and diabetes. In order to ensure chronic disease management is implemented effectively, appointment-scheduling systems must be revised to reduce the rate of missed appointments among low-income populations. In addition, social service professionals must be utilized to improve patient education and medical regimen compliance. Adapting health management models to reduce inequity between non-poor and poor patients is likely to positively contribute to the United States health-care system from both a social and economic perspective.

REFERENCES

Ancker, Jessica S., Yolanda Barron, Maxine L. Rockoff, Diane Hauser, Michelle Pichardo, Adam Szerency, and Neil Calman. 2011. "Use of an electronic patient portal among disadvantaged populations." *Journal of General Internal* Medicine, 26(10): 1117-1123.

Bramwell, Jason. 2011. "Children's Hospital Boston Cuts Asthma ED Visits by 64 Percent." *Healthcare Financial Management Association*.

Chariatte, Vincent, André Berchtold, Christina Akré, Pierre-André Michaud, and Joan-Carles Suris. 2008. "Missed Appointments in an Outpatient Clinic for Adolescents, an Approach to Predict the Risk of Missing." *Journal of Adolescent Health* 43(1): 38-45.

Currie, Janet and Wanchuan Lin. 2007. "Chipping Away at Health: More on the Relationship Between Income and Child Health." *Health Affairs* 26(2): 331-344.

Daggy, Joanne, Mark Lawley, Deanna Willis, Debra Thayer, Christopher Suelzer, Po-Ching DeLaurentis, Ayten Turkcan, Santau Chakraborty, and Laura Sands. 2010. "Using No-show Modeling to Improve Clinic Performance." *Health Informatics Journal* 16(4): 246-259.

Gellad, Walid F., Jennifer S. Hass, and Dana Gelb Safran. 2011. "Race/ethnicity and Nonadherene to Prescription Medications Among Seniors: Results of a National Survey." *Journal of General Internal Medicine* 26(12): 1572-1578.

Lacy, Naomi L., Audrey Paulman, Matthew D. Reuter, and Bruce Lovejoy. 2004. "Why We Don't Come: Patient Perceptions on No-shows." *Annals of Family Medicine,* 2(6): 541-545.

Lee, Vernon J., Arul Earnest, Mark Chen, and Barbara Krishnan. 2005. "Predictors of Failed Attendances in Multi-specialty Outpatient Centre Using Electronic Databases." *BMC Health Services Research* 5(51): 1-8.

Marcus, A.C. 1992. "Improving adherence to screening follow-up among women with abnormal pap spears: results from a large clinic-based trial of three intervention strategies." *Medical Care,* 30(2): 216-230.

Melnikow, Joy and Catarina Kiefe. 1994. "Patient Compliance and Medical Research: Issues in Methodology." *Journal of General Internal Medicine* 9: 96-104.

Melnikow, Joy, Mary Paliescheskey, and Gary Stewart. 1997. "Effect of a Transportation Incentive on Compliance with the First Prenatal Appointment: A Randomized Trial." *Obstetrics & Gynecology* 89(6): 1023-1027.

Ong, Paul M. 2002. "Car Ownership and Welfare-to-work." *Journal of Policy Analysis and Management* 21(2): 239-252.

Ouwens, Marielle, Hub Wollersheim, Rosella Hermens, Marlies Hulscher, and Richard Grol. 2004. "Integrated Care Programmes for Chronically Ill Patients: A Review of Systematic Reviews." *International Journal for Quality in Health Care* 17(2): 141-146.

Parikh, Amay, Kunal Gupta, Alan C. Wilson, Karrie Fields, Nora M. Cosgrove, and John B. Kostis. 2010. "The Effectiveness of Outpatient Reminder Systems in Reducing No-show Rates." *American Journal of Medicine* 123(6): 542-548.

Patient Protection and Affordable Care Act of 2010, PL. 111-148, sec 5101, 5102, 5313, 5403, and 3509.

Pesata, Virginia, Geri Pallija, and Adele A. Webb. 1999. "A Descriptive Study of Missed Appointments: Families' Perceptions of Barriers to Care." *Journal of Pediatric Health Care* 13(2): 178-182.

Stone, Christopher A., John Palmer, Peter J. Saxby, and Vikram Devaraj. 1999. "Reducing Non-attendance at Outpatient Clinics." *Journal of the Royal Society of Medicine* 92: 114-118.

Wagner, Edward H. 2000. "The Role of Patient Care Teams in Chronic Disease Management." *British Medical Journal* 320(7234): 569-572.

Woods, Elizabeth R., Urmi Bhaumik, Susan J. Sommer, Sonia I. Ziniel, Alaina Kessler, Elaine Chan, Ronald B. Wilsonson, Maria N. Sesma, Amy B. Burack, Elizabeth M. Klements, Lisa Queenin, Deborah U. Dickerson, and Shari Nethersole. 2011. "Community Asthma Initiative: Evaluation of a Quality Improvement Program for Comprehensive Asthma Care." *Pediatrics* 129(3): 465-472.

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