

## EDITORIALS

## Health Status Assessment Completing the Clinical Database

If measuring blood pressure with a sphygmomanometer were introduced into clinical practice today, there would be resistance to its adoption. The process would be unfamiliar and unsettling to the patient. The maneuver takes time. Measurement is prone to subjective factors. Scoring would require an unconventional scale. Both the short-term interpretation of the measurements and their long-term implications would be uncertain. Despite these problems, however, we have incorporated this ungainly procedure into our data collection routine. This adoption occurred because research has demonstrated both the measure's reliability and the association between small differences in blood pressure with future events such as a stroke. As a result, blood pressure was reframed from the province of physiology into a clinical and epidemiologic issue.<sup>1</sup> We now use blood pressure screening to identify patients who can benefit from interventions. Periodic measurements help monitor and adjust treatment regimens. Blood pressure is even used as a surrogate measure for clinical outcome in trials of new antihypertensive medications.

Currently, our clinical database consists primarily of biological and physiologic measurements like blood pressure. However, it is becoming apparent that these measures alone are not sufficient indicators of health. Given that health is more than simply the maintenance of organ function. The clinical database is incomplete.

Today, assessments of functional status and well-being are available to supplement the conventional database. These measures represent aspects of health directly experienced by the patient and together are often called measures of health status or health-related quality of life. Some of these measures require self-report, such as the 36-item short-form health status survey,<sup>2</sup> while others require the observation of performance, such as the 6-minute walk.<sup>3</sup> Although it is still early in the adoption process, it is appropriate to ask, "What is the evidence for the feasibility and usefulness of health-status measures?"

The most commonly used of these measures is functional status. Several such measures have been used to screen for and quantitate disability. Similar measures have been used to assess a person's fitness for work, predict personal care needs, and forecast a person's ability to live in the community.<sup>4</sup> In addition, self-reported measures of health status are increasingly used to measure the effectiveness of treatment in clinical trials. If used ap-

propriately, these measures can provide information that is not provided by physiologic measures.

There have been few attempts to use functional status to predict mortality<sup>5-8</sup> and fewer still to adjust for disease severity or case mix.<sup>9-13</sup> While previous research has shown the importance of including assessments of functional status for prognostication, the use of purely patient-based assessments may give additional and more precise information.<sup>12-15</sup> In general, self-reported health, an important element of health status, has proven to be a good predictor of mortality.<sup>14-18</sup> Further, it seems useful in predicting outcomes other than death, such as health-related quality of life and health services utilization.<sup>19-23</sup>

Data about functional status and well-being are theoretically easy to obtain; one need only ask or observe. Most assessments can be made quickly and with a minimum of bother to patients. When informed of their purpose, patients usually are cooperative. On the other hand, collecting this information does require deviation from the routine. In contrast to the traditional medical history and physical examination, these assessments require one to collect specific pieces of information, using questionnaires, interviews, observations, or inferences. Functional status assessment more closely resembles standard history taking and physical examination, but it still requires the collection of standardized data elements. Scoring is often too complex to complete at the bedside, and the meaning of the scores may not be immediately apparent. Furthermore, there is a sense that these soft measures are less trustworthy than hard, scientific biological data. Considering this, perhaps it is not surprising that health status measures have seen limited application in clinical settings.

In this issue, Covinsky et al. provide convincing evidence for the prognostic importance of functional status in seniors admitted to acute care hospitals.<sup>24</sup> Data about six activities of daily living (ADLs) were collected from 823 medical patients, and the patients were followed for mortality and resource use. The results are striking. Each decrement in functional status was accompanied by an increase in hospital mortality, mortality at 1 year, and nursing home use at 1 year. In fact, functional status was the most important predictor of mortality. Furthermore, hospital costs were considerably higher for those with lower functional status. These differences persisted after adjustment for severity of illness and comorbidity.<sup>25,26</sup>

As the authors acknowledge, their study has some

important limitations. Data collection was somewhat informal; the primary care nurse was asked whether the patient could do these activities or not. A standard instrument was not used, and the reliability of these assessments was not measured. The use of assistive devices was not considered in scoring, which may have led to some misclassification of function. Additional aspects of health status, which might add to prognostic information, were not collected. Thus, it seems likely that this study underestimated the potential predictive power of health status.

Taken with previous findings, the results of this article argue for the inclusion of health status measures in case mix or risk adjustment strategies. Current methods of risk adjustment rely mainly on diagnostic categories and severity of illness scores and do not include information on health status. One exception is the Index of Coexistent Disease, which includes functional status as part of its score.<sup>27</sup>

How should health status be included when adjusting for case mix? Ideally, one would use a brief, reliable tool that would not inconvenience patients or staff and that would be generalizable to a variety of settings. There also may be reason to include indicators of health status other than functional status, such as cognitive function, mental health status, and health perceptions. The ideal instrument has yet to be identified, and thus there is a pressing need for additional studies.

Health status measures serve multiple functions. They can be used to screen for disease, to predict adverse outcomes, and to measure clinical outcomes when treatments are tested or medical care is evaluated. Additional studies that demonstrate the predictive capabilities of health status measures, like the one by Covinsky et al. in this issue, may help potential users understand the meaning and importance of health status measures.<sup>24</sup> If so, then the measurement of blood pressure and the measurement of health status will have even more in common.—**ALBERT W. WU, MD, MPH, KATHLEEN A. CAGNEY, MA, Johns Hopkins University, Baltimore, Md. and PHILIP D. ST. JOHN, MD, Johns Hopkins University, Baltimore, Md., and the University of Manitoba, Winnipeg, Canada.**

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