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CLINICAL CHARACTERISTICS OF OLDER PERSONS IDENTIFIED BY PREDICTIVE MODELING AS TARGETS FOR INTENSIVE CLINICAL INTERVENTION

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Background: Certain older persons with chronic conditions requiring complex care may benefit from comprehensive clinical interventions, such as disease (or care) management. Predictive modeling software, which estimates a person's future medical resource use from historical claims information, is an efficient method for screening large populations, but its ability to select appropriate candidates for clinical interventions warrants further evaluation.

Purpose: To determine whether the older persons identified by predictive modeling software as being at risk for high medical expenditures have the co-morbidities and functional limitations that would make them candidates for comprehensive clinical interventions.

Methods: Health insurance claims generated during a 12-month period by older community dwelling enrollees in a capitated health plan were analyzed with predictive modeling software. The 18% of the enrollees with the highest predicted medical resource use during the next year (designated as "high-risk" enrollees) were then surveyed by mail about their health and functional status.

Results: Administrative data showed that, compared to low-risk enrollees, predicted high-risk enrollees had higher prevalence of eight chronic conditions common to older people (20 - 1200% greater, $p<0.01$), higher annual rates of hospital admission (1.1 vs. 0.1, $p<0.001$), more annual hospital days (7.3 vs. 0.5, $p<0.001$), and higher total health insurance expenditures ($22,815 vs. $3,726, $p<0.001$). The high-risk respondents to the survey (response rate = 80.0%) had poor health (42.8% reported "fair or poor" health status), impaired functional ability (means = 1.3 ADL limitations and 3.1 IADL limitations), and frequent activity disruptions (means = 9.3 bed disability days and 20.9 restricted activity days) during the previous six months.

Conclusions: The analysis of insurance claims data using predictive modeling software appears to be an effective and efficient method for screening older cohorts to identify individuals who might benefit from comprehensive clinical interventions.