CONFERECE ABSTRACT

Associations between patients’ perceptions of care integration and organizational features of medical groups in the United States

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**Background:** Prior studies suggest structurally integrating healthcare organizations may not yield care that is integrated for patients. This research has been limited by lack of comprehensive measures of integrated patient care. Our study establishes an evidence base of care integration from the patient’s perspective among a national sample in the United States using a reliable and valid survey. We explore the relationship between patient-perceived integration and elements of organizational integration among medical groups.

**Methods:** We refined and administered the Patient Perceptions of Integrated Care (PPIC) survey. It was theoretically derived, refined through pilot-testing, cognitive testing, and advisory panel input, and tested for reliability and validity. Psychometric analysis supported six dimensions of patient-perceived integration: (1) Provider Knowledge of the Patient, (2) Staff Knowledge about the Patient’s Medical History, (3) Specialist Knowledge about the Patient’s Medical History, (4) Support for Self-directed Care, (5) Support for Medication and Home Health Management, and (6) Test Result Communication. We also created an index of Integration following Hospitalization. This structure achieved good model fit and internal, discriminant, and construct validity. We administered the survey across a stratified random sample of 12,364 Medicare beneficiaries with at least two chronic conditions who had received care from a sample of 150 medical groups from the National Study of Physician Organizations (NSPO3). The final sample included 3,067 Medicare beneficiaries (26% response after 412
exclusions). We extracted data on the medical groups from the NSPO3 for five dichotomized dimensions: large/small size, physician/hospital ownership, primary care/multi-specialty, an information technology sophistication index related to electronic medical record and e-prescribing use (high/low), and an index regarding key care management process intensity (high/low). We conducted analyses using ordered logistic regression models with robust standard errors and weighting by response probability, adjusting for patient demographic, health and psychological characteristics.

**Results:** Among the seven dimensions of integration, Test Result Communication exhibited the most consistently positive responses; each of its three items had over 70% of respondents reporting the most favorable option. Support for Self-directed Care and Support for Medication and Home Health Management exhibited consistently the least favorable responses. For Support for Self-directed Care, none of its five items had more than half of responses in the most favorable option, and four of the five items had over 20% of responses in the least favorable option. For Support for Medication and Home Health Management, only one of its four items revealed a majority in the most favorable option (at 55%).

We did not find evidence of strong, consistent relationships between medical group characteristics and integrated care from the patient's perspective. Being a patient in a multispecialty group was associated with higher patient-perceived integration in all domains except for test result communication, but only the relationship with staff knowledge was statistically significant (odds ratio = 1.70; p<.05). There were no strong relationships between perceived integration and either hospital ownership or technological capabilities (odds ratios ranging from 0.99 to 1.01). As compared to patients of large medical groups, patients of both solo practices and small groups had greater odds of being in a higher quartile for provider knowledge, staff knowledge, and support for medication and home health management (the latter was statistically significant; odds ratio = 1.35; p<.01). There was a negative relationship between care management and test result communication for large groups, but a positive relationship for small and solo groups (chow test p = .002).

**Discussion:** According to respondents in this national survey, many opportunities exist to better integrate care for patients with multiple chronic conditions. Notably, the two dimensions exhibiting the lowest levels of integration both related to how well providers support patients in participating in their own care. Particularly for patients with complex illnesses, who require care at home and often face barriers to receiving it, this gap signals an important opportunity for investment and improvement.

Our results indicate that opportunities to better integrate care exist for all organizations. No single organizational feature was associated with stronger integration across all dimensions.

**Conclusion:** This research suggests that producing truly integrated care may be more complex than can be captured by simple measures of organizational structure, function and process. Considering patient-perceived assessments of care integration is critical to understanding delivery system transformation.
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**Keywords:** patient perceptions; organizational integration; survey research