Relational coordination promotes quality of chronic care delivery in Dutch disease-management programs

Jane Murray Cramm
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Background: Previous studies have shown that relational coordination is positively associated with the delivery of hospital care, acute care, emergency care, trauma care, and nursing home care. The effect of relational coordination in primary care settings, such as disease-management programs, remains unknown.

Purpose: This study examined relational coordination between general practitioners and other professionals in disease-management programs and assessed the impact of relational coordination on the delivery of chronic illness care.

Methodology: Professionals (n = 188; response rate = 57%) in 19 disease-management programs located throughout the Netherlands completed surveys that assessed relational coordination and chronic care delivery. We used a cross-sectional study design.

Findings: Our study demonstrated that the delivery of chronic illness care was positively related to relational coordination. We found positive relationships with community linkages (r = .210, p < .01), self-management support (r = .217, p < .01), decision support (r = .190, p < .01), delivery system design (r = .278, p < .001), and clinical information systems (r = .193, p < .01). Organization of the health delivery system was not significantly related to relational coordination. The regression analyses showed that even after controlling for all background variables, relational coordination still significantly affected chronic care delivery (β = .212, p < .01). As expected, our findings showed a lower degree of relational coordination among general practitioners than between general practitioners and other core disease-management team members: practice nurses (M = 2.69 vs. 3.73; p < .001), dieticians (M = 2.69 vs. 3.07; p < .01), physical therapists (M = 2.69 vs. 3.06; p < .01), medical specialists (M = 2.69 vs. 3.16; p < .01), and nurse practitioners (M = 2.69 vs. 3.19; p < .001).

Practice Implications: The enhancement of relational coordination among core disease-management professionals with different disciplines is expected to improve chronic illness care delivery.

With population aging and increased longevity, the increasing prevalence of chronically ill patients (Wagner et al., 2001) has led to deficiencies in the organization and delivery of care (Desai, Zhang, & Hennessy, 1999; Jacobs, 1998). Accumulated evidence has shown that the management of chronically

Key words: chronic illness care, disease management, primary care, quality, relational coordination

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ill patients is characterized by underdiagnosis, undertreatment, and failure to use primary and secondary prevention measures (Renders et al., 2001; Roland, Dusheiko, Gravelle, & Parker, 2005). Interventions in the organizational and clinical processes of primary care have been shown to improve the quality of such care (Lorig et al., 1999; McCulloch, Price, Hindmarsh, & Wagner, 2000; Von Korff, Gruman, Schaefer, Curry, & Wagner, 1997; Wagner, Austin, & Von Korff, 1996a, 1996b; Weinberger, Tierney, Booher, & Katz, 1989). The literature strongly suggests, however, that multicomponent interventions are required to change the processes and outcomes of chronic illness care (Nolte & McKee, 2008; Wagner et al., 1996b; Wagner, Davis, Schaefer, Von Korff, & Austin, 1999).

Disease-management programs (DMPs) aim to improve the effectiveness and economic efficiency of chronic care delivery (Norris, Glasgow, Engelgau, O’Connor, & McCulloch, 2003). In the literature, there are basically two types of disease-management models: (a) commercial DMPs and (b) primary care DMPs aiming to improve the quality of chronic care based on the chronic care model (CCM; Lemmens & Nieboer, 2009). Commercial DMPs are the oldest models and are more common in the United States. These DMPs provide care to chronically ill patients without any involvement of regular primary and hospital care. These commercial DMPs are contracted and paid by health insurance companies. The other types of DMPs are based on the CCM introduced by Edward Wagner (Wagner et al., 2001). The CCM was developed as a foundation for the redesigning of primary care practices and forms the basis for effective chronic care management. It addresses shortcomings in acute care models by identifying essential elements that encourage high-quality chronic disease care (Wagner et al., 1996a, 1996b) by combining patient-related, professional and organizational interventions (Lemmens, Nieboer, van Schayck, Asin, & Huijsman, 2008). The CCM clusters six interrelated components of health care systems: health care organization, community linkages, self-management support, delivery system design, decision support, and clinical information systems. Chronic care models aim to transform chronic disease care from acute and reactive to proactive, planned, and population based (Wagner et al., 2001). In the Netherlands, DMPs are based on the CCM. This model provides an organized multidisciplinary approach to the delivery of chronic care; unlike the commercialized DMPs targeting patients only, DMPs based on the CCM are aimed at both patients and professionals (Lemmens et al., 2008).

Disease-management programs are based on the coordinated response of all activities and information to the needs of chronically ill patients in a manner that is organized through horizontal, cross-cutting work processes, rather than through the functions in which professionals work. As the knowledge base required to practice medicine for chronically ill patients has increased, it has become impossible for one physician to possess all the information needed to care for a patient, resulting in the need for medical specialization and coordination of care among multiple specialists. Furthermore, chronic care is being provided in a greater variety of settings, including non-physician-provider offices, nursing facilities, and patients’ homes. Coordination of activities across care settings is therefore needed (Stille, Jerant, Bell, Meltzer, & Elmore, 2005). The effectiveness of DMPs depends on the ability to coordinate beyond individual tasks to more fully encompass the entire range of care for chronically ill patients (Provan & Milward, 1995; Shortell, Gillies, Anderson, Mitchell, & Morgan, 1993; Shortell, Gillies, & Devers, 1995). Coordination between DMP professionals of different disciplines is therefore a crucial element of effective disease management. Although many studies have illustrated the impact that coordination has on the quality and efficiency of patient care within a single organization (e.g., Baggs, Ryan, Phelps, Richeson, & Johnson, 1992; Gittell, 2000, 2002b; Kallenbach & Rosenblum, 2000; Shortell et al., 1994; Wagner, 1992) to assess relational coordination in DMPs, there is a need to extend coordination beyond the individual organization to improve patient’s care and investigate relational coordination between DMP professionals of various disciplines working at different organizations (Provan & Milward, 1995; Shortell et al., 1993, 1995).

### Theoretical Framework

Relational coordination, which is defined as “a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration” (Gittell, 2002b, p. 301), identifies specific dimensions of relationships that are integral to the coordination of work. Within this framework, coordination that occurs through frequent, high-quality communication that is supported by relationships based on shared goals, shared knowledge, and mutual respect enables organizations to better achieve their desired outcomes (Gittell, 2006). Relational coordination is expected to improve performance in potentially significant ways. Frequent and timely communication can generate rapid responses to emerging new information, minimizing delays and maximizing responsiveness to patients’ needs. Accurate communication reduces the potential for errors, and problem-solving communication avoids the negative cycle of blaming and information hiding, keeping the focus instead on continuous improvement and learning. High-quality relationships reinforce high-quality communication, encouraging professionals to listen to each other and to take account of the impact of their actions on those who are engaged in a different part of the process, thereby helping them to react to new information in a coordinated way. Such communication contributes further to the performance of the work process.
Relational coordination is expected to be particularly important for the achievement of desired outcomes in settings that are characterized by high levels of task interdependence, uncertainty, and time constraints (Gittell, 2000). Low levels of task interdependence allow professionals to work relatively autonomously, with little regard for other professionals in the work process; high task interdependence requires professionals to be aware of and responsive to actions undertaken by other professionals. Uncertainty further intensifies the need for relational coordination. Low levels of uncertainty allow responses and handoffs to be preplanned, with little need for coordinated responses to changing conditions. High levels of uncertainty, however, require professionals to be sensitive not only to changes that affect their own tasks but also to changes that affect the tasks of others with whom they are interdependent. Time constraints exacerbate the effects of interdependence and uncertainty, placing a premium on responsiveness.

Others have demonstrated the importance of relational coordination in flight departures, acute care, emergency care, trauma units, nursing homes, and hospital care (Gittell, 2002a, 2001; Gittell, Weinberg, Pfefferle, & Bishop, 2008; Havens, Vasey, Gittell, & Lin, 2010; Young et al., 1998). We hypothesize that they are also found in high-performing DMPs. General practitioners (GPs) and practice nurses deliver much, but not all, of the direct care in DMPs through one-on-one relationships with patients. Task interdependence exists between these practitioners and other DMP professionals, including other GPs and practice nurses, dieticians, physical therapists, medical specialists, nurse practitioners, pharmacists, and sometimes social workers. As in other health care settings, these interdependencies are not the simple sequential handoffs found on production lines but rather are iterative, requiring feedback among professionals as new information about patients emerges. Uncertainty about the physical and mental conditions of chronically ill patients is present and unpredictably variable in these settings; appropriate and collective responses require professionals to be attentive to the patient and to other professionals. Finally, time constraints in DMPs result from the short periods during which professionals see patients and the need to effectively manage and prevent the worsening of patients’ chronic conditions. Failure to respond to patients’ needs in a timely manner is expected to lead to worsened health outcomes and reduced quality of life. Relational coordination among professionals working in DMPs is therefore expected to improve the delivery of chronic illness care by improving the exchange of information relevant to the care of a given patient under conditions of interdependence, uncertainty, and time constraints. This is, however, a dynamic relationship. As theorized in Gittell’s “Organizing Work to Support Relational Coordination,” organizational practices such as DMPs are expected to influence the level of relational coordination observed among involved professionals. These practices include coordinating mechanisms that govern and support the flow of information in organizations, both programmed (e.g., through information systems and standardized routines) and nonprogrammed (e.g., via team meetings; Gittell, 2002a). Therefore, this relationship is considered dynamic (Figure 1): Higher levels of relational coordination among professionals within DMPs are expected to result in higher quality chronic care (such as self-management support for patients), but better information systems and delivery system design that govern and support the flow of information in organizations are, in turn, also expected to lead to higher levels of relational coordination.

On the basis of these arguments, we propose the following hypothesis regarding relational coordination in DMPs.

**Hypothesis 1:** Relational coordination among DMP professionals is positively associated with the delivery of high-quality chronic illness care.

### Relational Coordination Among DMP Professionals

Like other industries, health care suffers from status divisions among those responsible for carrying out distinct,
yet interrelated, functions. Relational coordination may be more readily achieved among members of the same discipline than among those of different disciplines (Lemmens et al., 2010). O’Leary et al. (2010) found that members of disciplines involved in patient care held discrepant views about working together that posed potential communication barriers. Disease-management programs aim to break through the traditional functions of health care professionals and to achieve synergy among disciplines by combining the perspectives, resources, and skills of all involved professionals to create a new and valuable whole that is greater than the sum of its individual parts. The effectiveness of DMPs depends on the ability to coordinate beyond individual tasks to more fully encompass the entire range of care for chronically ill patients (Provan & Milward, 1995; Shortell et al., 1993, 1995). Coordination between DMP professionals of different disciplines is considered a crucial element of effective disease management. Because GPs are the main care coordinators in DMPs, we are interested in comparing the relative levels of relational coordination among GPs and between GPs and other DMP professionals. In contrast to the findings of previous research in other health care settings, we propose the following hypothesis:

Hypothesis 2: Relational coordination among DMP professionals of different disciplines will be higher than among GPs.

Methods

DMP Teams

This cross-sectional study was performed within the context of a national program examining the management of chronic diseases in the Netherlands. We evaluated DMPs to enhance our knowledge of relational coordination in disease-management experiments in chronic illness care. These DMPs were implemented in various Dutch regions and consisted of a variety of collaborations, such as those between GPs and hospitals, primary care collaborators (including physiotherapists and dieticians). The DMPs targeted several patient populations: those with cardiovascular diseases (n = 9), chronic obstructive pulmonary disease (n = 5), diabetes (n = 3), heart failure (n = 1), and stroke (n = 1). Questionnaires were sent to 329 professionals participating in the DMPs.

Each DMP consisted of a combination of patient-related, professionally directed, and organizational interventions. The combination of disease-management interventions for each region varied. The core of a DMP is described below; for detailed program information, see our study protocol (Lemmens et al., 2011).

Patient-Related Interventions. Self-care is critical to optimal management of chronic diseases. Hence, all 19 DMPs included such interventions. Examples of self-management within the DMPs are patient education on lifestyle (e.g., smoking, exercise, diet), regulatory skills, and proactive coping.

Professional-Directed Interventions. Care standards, guidelines, and protocols are essential parts of the 19 DMPs. They are integrated through timely reminders, feedback, and other methods that increase their visibility at the time that clinical decisions are made. All DMPs are built on these (multidisciplinary) guidelines. The implementation strategies for professional interventions may, however, vary. Although all DMPs provide training for their professionals, not all DMPs implemented supporting Information and Communication Technology tools such as integrated information systems.

Organizational Interventions. Many forms of organizational changes are applied in the 19 DMPs. Examples of organizational interventions are new collaborations of care providers, transferring information and scheduling appointments more effectively, case management, using new types of health professionals, redefining professionals’ roles and redistributing their tasks, allocating tasks differently, planned interaction between professionals, and regular follow-up meetings by the care team.

Ethics

The study was approved by the ethics committee of the Erasmus University Medical Centre, Rotterdam (September 2009).

Measures

In addition to background characteristics, the questionnaire incorporated instruments that have demonstrated reliability and validity in prior research.

Relational coordination encompasses four communication dimensions (frequent, timely, accurate, and problem-solving communication) and three relationship dimensions (shared goals, shared knowledge, and mutual respect). The instrument that measures relational coordination was originally developed for the airline industry (Gittell, 2001) and has been applied in hospital settings (Gittell, 2000). Based on previous studies, we expected relational coordination in DMPs to have reliability scores between .80 and .90. Following the nursing home study of Gittell et al. (2008), we used a 4-point scale to measure relational coordination in DMPs. The Relational Coordination instrument was used to measure GPs’ perceptions of relational coordination with other DMP professionals: practice nurses, dieticians, physical therapists, medical specialists, nurse practitioners, pharmacists, and social workers.

The Assessment of Chronic Illness Care (ACIC) consists of 34 items covering the six areas of the CCM: health care organization (six items), community linkages (three
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Statistical Analyses

We used descriptive statistics to analyze the professionals’ gender, occupation, organizational work history, and hours per week spent on the DMP. Cronbach’s alpha served as a measure of homogeneity reflecting the (weighted) average correlation of items within a scale. Correlation analysis was used to investigate the relationship between relational coordination and the CCM components: health care organization, community linkages, self-management support, delivery system design, decision support, and clinical information systems. Multiple regression analyses were used to determine whether relational coordination predicts chronic care delivery. The degree to which differences in relational coordination existed among GPs and other DMP professionals was assessed through a series of paired-sample t tests.

Table 1 displays the descriptive characteristics of the sample of professionals. Response rates of DMPs ranged between 35% and 100%. Of those who completed the questionnaire (188/329, 57%), the majority was women (67%) and the mean age was 47.2 ± 9.47 years (range = 25–65 years). About 77% had been working in their current organization for more than 3 years, and more than half (67%) worked more than 29 hours per week. Disease-management teams consisted primarily of GPs (37%), practice nurses (30%), and paramedical professionals (dieticians, 4%; physical therapists, 4%).

Cronbach’s alpha values of the relational coordination subscales ranged from .80 (frequency subscale) to .89 (knowledge and respect subscales), indicating internal consistency (Table 2). The overall Cronbach’s alpha of the relational coordination instrument was .96, indicating excellent reliability. Overall ACIC scores ranged from 3 to 10, indicating basic/intermediate to optimal/comprehensive delivery of chronic illness care. Cronbach’s alpha for the ACIC was .91, also indicating excellent reliability.

The results of correlation analyses demonstrated that relational coordination is related to care that is more consistent with the CCM (Table 3). We found positive relationships between relational coordination and the overall ACIC (r = .226, p = .002). We also investigated relationships between the ACIC subscales and relational coordination. These results show a positive relationship between relational coordination and community linkages (r = .210, p < .01), self-management support (r = .217, p < .01), decision support (r = .190, p < .01), delivery system design (r = .278, p < .001), and clinical information systems (r = .193, p < .01). Organization of the health delivery system was not significantly related to relational coordination. Steinhaeuser et al. (2011) found that because the organization of health care systems is different, ACIC questions regarding the organization of the health delivery system are sometimes not understood the same way in

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Table 1

Sample characteristics of the professionals participating in disease-management partnerships (n = 188)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>66.6%</td>
</tr>
<tr>
<td>Organizational work history</td>
<td></td>
</tr>
<tr>
<td>&gt; 3 years</td>
<td>76.6%</td>
</tr>
<tr>
<td>Working hours</td>
<td></td>
</tr>
<tr>
<td>&gt; 29 hours</td>
<td>67.4%</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>General practitioner</td>
<td>37.2%</td>
</tr>
<tr>
<td>Practice nurse</td>
<td>29.5%</td>
</tr>
<tr>
<td>Physical therapist</td>
<td>4.4%</td>
</tr>
<tr>
<td>Dietician</td>
<td>3.8%</td>
</tr>
<tr>
<td>Medical specialist</td>
<td>2.2%</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>2.7%</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>1.9%</td>
</tr>
<tr>
<td>Social worker</td>
<td>1.7%</td>
</tr>
<tr>
<td>Manager/policy worker</td>
<td>3.9%</td>
</tr>
<tr>
<td>Other</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

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Table 2

Relational coordination scale characteristics (n = 188)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s α</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequency</td>
<td>.80</td>
<td>21.44 (5.09)</td>
</tr>
<tr>
<td>2. Timely</td>
<td>.83</td>
<td>21.09 (6.11)</td>
</tr>
<tr>
<td>3. Accurateness</td>
<td>.87</td>
<td>23.12 (7.55)</td>
</tr>
<tr>
<td>4. Problem solving</td>
<td>.87</td>
<td>23.79 (7.53)</td>
</tr>
<tr>
<td>5. Knowledge</td>
<td>.89</td>
<td>25.83 (7.87)</td>
</tr>
<tr>
<td>6. Respect</td>
<td>.89</td>
<td>26.41 (8.20)</td>
</tr>
<tr>
<td>7. Goal</td>
<td>.87</td>
<td>23.12 (7.55)</td>
</tr>
<tr>
<td>8. Relational coordination</td>
<td>.96</td>
<td>18.56 (4.98)</td>
</tr>
</tbody>
</table>

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Europe, as they pertain more to the U.S. system. This may explain why we did not find a significant relationship between this subscale and relational coordination in Dutch DMPs. Multiple regression analyses were performed to identify predictors for delivery of chronic care according to the elements of the CCM (Table 4). These results demonstrate that chronic care delivery was positively influenced by gender (female; \( \beta = .236, p \leq .01 \)) and relational coordination (\( \beta = .212, p \leq .01 \)). No significant relationship was found between occupation, number of years working in the current organization, number of working hours per week, and chronic care delivery. These results show that even after controlling for all background variables, relational coordination still significantly affected chronic care delivery. These findings support Hypothesis 1, that relational coordination among DMP professionals is positively associated with the delivery of high-quality chronic illness care.

Table 5 displays relational coordination between GPs and other DMP professionals. Our findings showed a higher degree of relational coordination between GPs and core DMP professionals of other disciplines than among GPs: relational coordination between GP and practice nurses (\( M = 2.69 \) vs. 3.73; \( p < .001 \)), dieticians (\( M = 2.69 \) vs. 3.07; \( p < .01 \)), physical therapists (\( M = 2.69 \) vs. 3.06; \( p < .01 \)), medical specialists (\( M = 2.69 \) vs. 3.16; \( p < .01 \)), and nurse practitioners (\( M = 2.69 \) vs. 3.19; \( p < .001 \)). These findings support Hypothesis 2, that relational coordination among DMP professionals of different disciplines will be higher than among GPs.

### Practice Implications

The findings of this study make several contributions to our understanding of relational coordination. This is the first study to present evidence for the importance of relational coordination for DMPs in a primary care setting. Our cross-sectional study of 19 DMPs demonstrated that the delivery of chronic illness care was positively related to relational coordination. Furthermore, we increased our understanding of relational coordination between the various disciplines working together in DMPs. Disease-management programs aim to break through the traditional functions of health care professionals and to achieve synergy among disciplines. Coordination between DMP professionals of different disciplines is considered a crucial element of effective disease management. In contrast to the higher levels of relational coordination found previously among health care professionals of the same discipline (Havens et al., 2010; O’Leary et al., 2010), our study showed higher levels of relational coordination among GPs and core DMP professionals of different disciplines (dieticians, physical therapists, practice nurses, medical specialists, and nurse practitioners) than among GPs. Because relational coordination between DMP professionals of different disciplines is often the goal of DMPs, this was in line with our expectations. The effectiveness of DMPs depends on the ability to coordinate beyond each individual task to encompass the entire episode of care for a chronically ill patient (Provan & Milward, 1995; Shortell et al., 1993, 1995). Relational coordination among GPs was not lower than relational coordination between GPs and pharmacists and between GPs and social workers, which was also in line with our expectations because pharmacists and social workers usually are not the core professionals of DMPs.
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Table 5
Relational coordination between GPs and other professionals within the DMP

<table>
<thead>
<tr>
<th></th>
<th>Relational coordination among GPs vs. between GPs and DMP professionals of other disciplines</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Among GPs</td>
<td>2.69</td>
</tr>
<tr>
<td>Between GPs and practice nurses</td>
<td>3.73***</td>
</tr>
<tr>
<td>Between GPs and dieticians</td>
<td>3.07**</td>
</tr>
<tr>
<td>Between GPs and physical therapists</td>
<td>3.06*</td>
</tr>
<tr>
<td>Between GPs and medical specialists</td>
<td>3.16**</td>
</tr>
<tr>
<td>Between GPs and nurse practitioners</td>
<td>3.19***</td>
</tr>
<tr>
<td>Between GPs and pharmacists</td>
<td>2.50</td>
</tr>
<tr>
<td>Between GPs and social workers</td>
<td>2.34</td>
</tr>
</tbody>
</table>

Note: GP = general practitioner; DMP = disease-management program.

* p ≤ .05.
** p ≤ .01.
*** p ≤ .001.

This study has several limitations. First, the cross-sectional design allowed us to identify associations but not to determine causality. Longitudinal data would have enabled us to disentangle the dynamic relationship between relational coordination and high-quality chronic care delivery. Second, we examined the impact of relational coordination among professionals on chronic care delivery; further research is necessary to assess the effects of relational coordination on patient experiences and outcomes. Third, this study included professionals working in DMPs in the Netherlands and may not be generalizable to DMPs in other countries. Fourth, there is the potential danger of nonresponse bias because of nonresponse. It is similar (or even quite high) compared with that in other studies in which the respondents received a questionnaire by mail (Buttle & Thomas, 1997), but we do not know how the results might have varied with a better response.

Despite these limitations, our study results have important implications for theory and practice. Our findings suggest that partnership among DMP professionals of different disciplines can improve the delivery of chronic illness care. The effectiveness of DMPs requires strong connections not only between DMP professionals and chronically ill patients but also among professionals providing patient care. Integration of these professionals through a network of supportive relationships can prevent deficiencies in patient care created by conflict, misunderstanding, or fragmented efforts among professionals. The ability of DMPs to provide holistic care that encompasses physical and psychosocial dimensions (Bowers, Fibich, & Jacobson, 2001; Eaton, 2000) arguably requires coordination among participating professionals through relationships characterized by shared goals, shared knowledge, and mutual respect. Our findings thus provide support for the role of relational coordination in DMPs and suggest that such coordination may be a component of their effectiveness.

Our study also has important theoretical implications. Human resource theories have often argued that professionals are important components in the achievement of high performance due to their commitment and motivation or to the knowledge and skills that they bring to the job. In agreement with the findings of Havens et al. (2010), our results also indicate that the importance of professionals may lie in the relationships that exist among them and the potential use of those relationships to more effectively coordinate work. The relational coordination perspective focuses on connections among professionals and on the impact that these connections have on organizational outcomes, such as the delivery of chronic illness care. Our findings have clear implications for DMPs in primary care settings. To foster relational coordination, potential DMP collaborators should be selected for and trained in relational as well as functional competence. Relational competence includes the ability to see the larger process and the manner in which each individual’s work connects to that of every other individual, in our case to support the needs of chronically ill patients. It also includes the ability to see others’ perspectives, empathize with their situations, and respect their work, even if it requires different skills or is of a lower status than one’s own. Encouraging conversation and interactions among DMP professionals in practices who do not normally interact much may enhance these abilities (Jordan et al., 2009). It is also important to consider ways of integrating training programs so that DMP professionals can come to a better understanding of their interdependence instead of training professionals in isolation from one another (Lanham et al., 2009). In addition to selection and training, professionals’ performance should also be measured and rewarded. This evaluation of performance should extend beyond the outcomes of professionals’ individual tasks to include broader process outcomes, such as those related to patients’ quality of life.

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