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Commentary

Unraveling the “Black Box” of Case Management

Thomas P. O'Toole, MD, National Center on Homelessness Among Veterans, VACO Homeless Program Office

How many times have we reviewed a clinical case, attempted to navigate a complex treatment plan with a patient and his or her family, or tried to communicate with a provider outside the VA system only to be left with a sense of frustration and futility? Our conditioned response has often been to refer the patient for case management. Case management, however, needs to be treated as more than a box to check or consult to be placed. Participants in a recent VHA-sponsored Workgroup on Care Coordination/Care Transitions emphasized that case management is a team effort that incorporates care systems—especially around information exchange, care transitions and prospective care planning—involves population health management principles, and uses emerging technologies. Case management must also be evidence-based and outcomes-driven.

Coordinating health care is becoming more difficult as the number of aging Veterans and Veterans with multi-morbid medical conditions and social needs grows. Frequently, these Veterans have limited social supports, challenges navigating complicated treatment plans, limited health literacy, and marginal engagement in chronic care. Coupled with the increase in dual coverage from Veterans aging into Medicare eligibility, the success of the Affordable Care Act in expanding health insurance coverage, and the passage of the CHOICE Act for Veterans, the challenges of coordinating and managing care across multiple health settings and payer systems are more difficult than ever.

Within this context, the field of case management and care coordination has evolved with proven treatment modalities led by professional clinical staff across many different settings and with expertise in many clinical conditions. Several well-established frameworks offer providers a roadmap for considering case management and coordination of complex patients; these include the Robert Wood Johnson Foundation and University of Pennsylvania Transitions of Care Model, the VHA Case Management Standards of Practice (VHA Handbook 1110.04), and the Agency for Healthcare Research and Quality (AHRQ) Care Coordination Measures Atlas.¹ The AHRQ framework specifies different elements and components of care coordination that include:

- Identifying who is accountable and responsible for the care coordination;
- Enhancing communication, both interpersonal and information transfer;
- Facilitating transitions across care settings and as coordination needs change;
- Assessing patient and family needs and goals;
- Creating a proactive plan of care;
- Monitoring and follow up;
- Supporting self-management goals;
- Linking to community resources; and
- Aligning resources with patient and population needs.



Director's Letter

The Chronic Care Model is now close to 20 years old.¹ In it, Ed Wagner and his co-authors outlined six elements necessary to support an effective partnership between clinicians and patients to optimize care of chronic conditions: support for self-management skills of patients; clinical decision support based on evidence-based guidelines; electronic

data infrastructure to track individual and population progress; a delivery system designed to promote collaboration; and supportive health systems and community resources where efforts and incentives are aligned. These elements have existed in VA for some time and should be further enhanced as dissemination of the Patient Aligned Care Team (PACT) model continues. It is thus no surprise that VA generally outperforms the private sector on many of the routine measures of chronic disease care, such as control of diabetes, high blood pressure and elevated lipids.² Doing well “on average” should not, however, distract us from the reality that performance is not uniformly good across our multiple facilities and diverse patient populations, and that we need new tools to improve care for those populations that still lag behind. Since Veterans spend the vast majority of their time outside the health system, the greatest opportunity for progress in VA (and outside VA) may be in improving the self-management skills of our patients. Most Veterans have more than one chronic condition and many have complex medical regimens with limited support at home. Traditional patient education (e.g., diabetes education clinics) is not sufficient for teaching sustainable self-management skills. As described in this issue, new approaches such as text messaging and peer support can extend the reach of clinicians and help create the type of patient engagement and activation needed for true self-management. The ongoing challenge will be to merge our efforts to promote collaborative, proactive care management with those to promote patient-centered care. The goal of care management cannot be to improve lab values and performance on quality metrics—optimal care must focus on those outcomes that really matter to the patient, which unfortunately are rarely captured in our traditional performance measures. That of course is a research agenda in itself.

David Atkins, MD, MPH, Acting Chief Research and Development Officer

1. Wagner EH, Austin BT, Von Korff M. “Organizing Care for Patients with Chronic Illness,” *Milbank Quarterly* 1996; 74(4):511-44.
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Similarly, the National Transitions of Care Coalition's *Care Transition Bundle* identifies seven core intervention categories: medical management; transition planning; patient and family engagement/education; information transfer; follow-up care; health care provider engagement; and shared accountability across providers and organizations.²

It is important to note that VA serves as a leader in the field of care management. The Office of Care Management and Social Work Services and the Office of Nursing Services have developed professional standards and certification for specialized nurse and social work case managers. The development of Patient Aligned Care

Teams (PACTs) has transitioned primary care to a medical home care management model with several notable improvements in care. Similarly, several VA programs have developed population-specific clinical programming for those highest risk population groups, including post-deployment clinics, spinal cord injury care, Geriatric PACTs, Homeless PACTs, comprehensive women's health centers as well as care transition programs like Hospital-to-Home and Home-Based Primary Care.

Unfortunately, despite these efforts, gaps persist and challenges remain. In one recent study, 16 to 20 percent of Veterans 65 years of age and older were readmitted to a VHA hospital within 30 days of discharge.³ Anecdotal reports of complex patients having multiple, concurrently assigned case managers suggest potential redundancies and inefficiencies. A gap analysis conducted by the aforementioned workgroup, while noting best practices for those Veterans enrolled in specialized care and case-managed programs, also described challenges identifying and engaging those in need of these services. These challenges are especially present when providers treat Veterans outside VHA or in care settings not aligned with these efforts.

Maintaining accountability and continuity, especially across care settings and within the community, often underlies poor outcomes occurring during the critical care transitions from inpatient to outpatient care. Communications challenges across disciplines and even among case managers underscore the difficulties of managing care within a large, diverse, and fragmented delivery system. Bringing to scale tested models, better aligning our coordination efforts, or rethinking our approach within a systems design framework are all strategies that need to be considered.

While much has been done within VA that far exceeds the community standard in many settings, there is much more that needs to occur. The expanding scope of care that extends beyond our current VHA care platform, the growing population of increasingly complex, frail, and vulnerable Veterans, and the challenges and opportunities inherent to working in the largest integrated health system within the United States is our reality. It is both our oppor-

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Response to Commentary

The Who, Where, When, How, and What of Case Management and Integrated Care

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Dr. O'Toole nicely highlights key components of effective case management and identifies both gaps and opportunities in this increasingly important aspect of integrated health care. Building upon his commentary, I highlight additional factors that might enhance the effectiveness not only of case management but also of integrated care writ large.¹

Level of Care (Who)

A primary care physician (PCP) myself, I nonetheless contend the PCP need not invariably be the first step nor the bottleneck of all patient care. Instead, a stepped approach starting with the patient (i.e., self-management) and moving up a ladder in which peers, medical assistants, health care professionals (e.g., nurses, pharmacists, social workers, psychologists), PCPs, and specialty physicians all have a specific role is at once a more rational and team-based approach. Evidence suggests that each of these six rungs of the care team can, with appropriate training and synchronization, provide a sum greater than the segregated parts. Thus, a first principle of case management is to not ascend higher on the ladder than necessary.

Site of Care (Where)

Too much patient care is clinic-based. A great deal of data gathering, monitoring, education, motivation, and treatment can be conducted without the large indirect costs of travel, time away from work or home, and waiting to see the clinician. Often we focus too narrowly on patients in rural areas as the principal beneficiaries, whereas patients in large urban areas may also have inordinate commute times and comparable work loss and sacrificed time costs. Probably half or more of office visits could be replaced by distance-based,

technology-enhanced encounters.² Thus, a second principle is to accelerate the movement toward more home-based care except in those situations where patient travel to a health care facility is essential (e.g., procedures, certain diagnostic tests, infusion therapy, or urgent conditions).

Timing of Care (When)

More patient care activities could be done asynchronously rather than in real time. These include collection and monitoring of patient-reported data, clinician-patient communication, and selected aspects of management. A related issue is the increasing amount of clinical work that occurs outside of face time with the patient, including electronic health record (EHR) documentation, review of the enormous volume of EHR data relevant to patient care, and electronic communication with patients and other providers. Although strategies exist for using a computer in the exam room, financing more time for these activities is essential so that the patient does not feel like someone eating dinner with a friend preoccupied with texting. Consequently, a third principle is to use patient time in a patient-centered fashion while assuring practices accommodate clinical activities not requiring the patient's presence.

Technology of Care (How)

The rapid acceleration of technology-assisted health care allows only for the articulation of several salient issues. One is tailoring the modality (telephone, tele-video, Internet, apps) to the clinical task. A second is deciding upon the relative roles of simultaneous (in-person or by phone) versus sequential (e-mail, texting, voice mail) clinician-patient interactions. The latter must account for the heightened privacy concerns unique to personal health infor-

mation. A third issue is the degree to which patient data and transactions captured or enabled by technology are separate from or incorporated into EHRs. A fourth issue is the degree to which proprietary concerns of vendors are balanced with the needs of providers and health care systems.

Components of Integrated Care (What)

Key components are summarized by O'Toole and others, so only a few high-priority decisions are noted.^{1,3} First, should case managers focus on a single common condition (e.g., VA TIDES program for depression) or a portfolio of several conditions (hypertension, diabetes, etc.)? Second, which patients warrant case management resources and for how long? Third, how does one select a resource (and avoid redundancy) when multiple options are available (e.g., when a hypertensive patient could have a follow-up encounter with a PACT nurse, telehealth nurse, or pharmacist)? Fourth, how is the explosion of asynchronous communication (viewing alerts from other providers, secure messages from patients, e-consults from specialists, multiple clinical reminders) optimally integrated into the work flow of practice? Fifth, how is efficient synergism between the VA and non-VA care of our Veterans achieved given the yet unfulfilled promise of health information exchanges?

The brief taxonomy of choices reviewed here is a promising indicator of how team-based care augmented by technology can transform health care that heretofore has been fragmented into coordinated longitudinal population-based health.

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Research Highlight

The Potential Role of Secure Messaging in Care Management

Thomas K. Houston, MD, MPH, and Timothy P. Hogan, PhD, both with HSR&D's Center for Healthcare Organization and Implementation Research and eHealth Partnered Evaluation Initiative, Bedford, Massachusetts

In line with this FORUM's focus on care management, we report on recent research related to Secure Messaging's potential to support care management and shared decision making outside the "bricks and mortar" of in-person clinic visits. VA serves a Veteran population with a heavy burden of chronic illness. As the Veteran population ages, the prevalence of VA users with multiple chronic conditions will continue to rise. Health care management is currently centered on the intermittent transaction of the clinical visit, which does not work well for chronic, complex conditions. Transactional care with three-month follow-up visits fosters clinical inertia on the part of the provider, and does not achieve optimum control. The National Academy of Medicine has advised a shift toward continuous care for chronic conditions, including the use of technologies, such as patient portals, personal health records, and Secure Messaging, which, in VA, offers asynchronous online communication between patients and their clinical team.

My HealtheVet Secure Messaging

With over 2 million Veterans able to use Secure Messaging through the My HealtheVet patient portal, VA is one of the largest adopters of this form of communication in the United States. VA investigators have demonstrated that facility adoption of Secure Messaging is associated with reduction in urgent care visits, and use of Secure Messaging by Veterans with diabetes is associated with improvements in hemoglobin A1c. Currently, most use of Secure Messaging is reactive, with clinical teams responding to patient requests, as opposed to clinical teams reaching out to

seek information from patients and engage them in their care. Engaging patients and providers in shared agenda setting and encouraging information sharing about goals has been demonstrated to increase patient perceptions of autonomy and to improve adherence and outcomes. Yet implementation of shared agenda setting in primary care is challenging due to time constraints on the in-person encounter.

With funding from VA's Quality Enhancement Research Initiative, we recently completed an evaluation of proactive pre-visit Secure Messaging. Our goal was to implement a pre-visit cue to patients via Secure Messaging to share the "three things they would like to talk to the doctor about." Two weeks prior to a clinic visit, pre-visit Secure Messages were sent to VA primary care patients. When patients responded, the primary care team received a response alert. In pre-implementation work, primary care teams voiced strong support for the pre-visit Secure Message concept, but experienced problems integrating it within existing workloads. In response, we developed a revised implementation program that centralized a "pre-visit Secure Messaging champion" who assumed the work of sending out pre-visit messages for all teams.

During implementation across two VA facilities, 14 clinical teams were trained in how to manage pre-visit responses from patients. To facilitate training, needs assessment data collected from teams revealed a preference for scenarios illustrating the role of pre-visit planning through Secure Messaging, Secure Messaging templates to support uptake, as well as training guides and related educational

materials about use of pre-visit messages among different stakeholders. These resources and accompanying content were disseminated through in-person team training sessions.

To assess impact of implementation, we monitored rates of reading and responding to Secure Messages, coded the content of the messages (e.g., related to diagnoses, symptoms, tests, medications, and psychosocial and preventive health issues), and then reviewed charts for documentation of provider action in response to the patient concerns in message replies.

Role and Potential of Pre-Visit Messages

Of 1,967 patients who were sent pre-visit messages, 756 (38 percent) read the messages, and 201 (10 percent) replied with an agenda (concerns to discuss at the visit). Patient messages included concerns about medications (43 percent), tests (35 percent), pain (32 percent), other symptoms (48 percent), and psychosocial or preventive issues (10 percent). Of the 561 concerns included in these 201 messages, 81 percent were documented to have been addressed by their physician, either in a pre-visit Secure Message response, or in the note from the clinic visits. Among concerns that were medication-related, 93 percent were addressed. However, if the concern was psychosocial in nature or related to preventive health, documentation showed that providers addressed only 54 percent in the episode of care.

Several recent systematic reviews have reinforced that interventions designed to increase shared agenda setting, decision support, and patient engagement in care have resulted in improved care management and outcomes. We found that some, but not all patients utilized the patient portal to respond with agenda items for the appointment. With training, providers were responsive to patient concerns; however, our review of clinical documentation found variability in the extent to which different kinds of concerns were addressed. Beyond this study, further work is needed to increase patient response to pre-visit preparation cues and to further support providers in their efforts to be responsive to patient agendas.

Research Highlight

Enhancing Primary Care to Serve Veterans with Serious Mental Illness: SMI PACT

Alexander S. Young, MD, MSHS, and Amy N. Cohen, PhD, HSR&D Center for the Study of Healthcare Innovation, Implementation and Policy, and VA Desert Pacific Mental Illness Research, Education, and Clinical Center, both in Los Angeles, California

Health care systems are interested in identifying patients at high risk of hospitalization or poor outcomes and proactively improving their care. This high-risk patient population includes a large proportion of individuals with mental illness or substance use disorders. Individuals with serious mental illness (SMI) have not benefited from improvements in prevention and primary care that have reduced mortality in the rest of the population over recent decades. While Veterans with SMI have better medical care and outcomes than individuals with SMI who do not have access to VA, substantial disparities remain between the care of Veterans with and without SMI.

Evidence indicates that individuals with SMI have difficulty accessing health care and managing their complex comorbid conditions. This population has diminished quality of life from chronic diseases. In VA, the overall prevalence of type 2 diabetes in individuals with schizophrenia, the hallmark SMI disorder, is 26 percent, while the rate in individuals with schizophrenia nationally is 16 percent, and in the general population it is 5 percent. Also, people with SMI have significantly elevated rates of obesity, smoking, and other metabolic risk factors. More than 60 studies have found that mortality rates among individuals with SMI are two to three times greater than in the general population. When studied in VA, all-cause mortality risk was found to be 1.4 for depression, 1.3 for bipolar disorder, and 1.6 for schizophrenia. In VA, the number of Veterans with SMI has risen every year since fiscal year (FY) 1999. Total health care costs for Veterans with psychosis were approximately \$4.6 billion in FY 2008. These total costs rep-

resent an increase of 13 percent from FY 2007 to FY 2008, with the majority of costs arising from non-psychiatric care.

What Primary Care Models are Effective?

Although VA provides centrally organized, comprehensive health care, Veterans with SMI still have difficulty navigating the system. Too often, they do not attend appointments or fail to engage in primary care treatment, and do not receive valuable preventive and primary care services. The VA Primary Care-Mental Health Integration initiative has addressed Veterans' mental health conditions by co-locating mental health clinicians in primary care settings, and by making care management services available in these settings for common psychiatric disorders. This has focused on patients with depression and anxiety, with the goal of managing these patients within primary care, freeing up specialty mental health services for patients who need them most.

The next step is to transform the health care of Veterans with SMI. Some VAs have co-located primary care clinicians within specialty mental health settings. However, this co-location has not been implemented widely, and researchers have found that it has inconsistent effects on care processes and outcomes. Treatment processes, in particular, need to be improved to address patients' complex needs. A modest number of research studies have examined the effectiveness of care models for improving the medical care of people with SMI. Models have included co-location, team-based care, and facilitated referrals to primary care. While there have been some positive effects, implementation has varied, and it

is difficult to know which models are effective. The few economic studies in this area have often found models to be cost-neutral or cost-reducing from the perspective of the health plan. One particularly promising team-based model includes medical care management, in which highly competent clinicians provide proactive care to a defined panel of patients. Evidence also supports the efficacy of collaborative care to improve treatment for people with SMI.

VA's Patient Aligned Care Team (PACT) model can include care coordination, patient-centered care, and use of clinical data to proactively manage populations. It seems likely that PACT can be tailored to meet the needs of Veterans with SMI by applying the evidence on medical care management and collaborative care.

SMI-PACT: A Primary Care Model for those with Serious Mental Illness

VA HSR&D QUERI is supporting a project to implement and evaluate a specialized PACT model that meets the needs of individuals with SMI ("SMI-PACT"). The SMI-PACT team is led by a primary care provider. Tailoring of the PACT model includes a smaller panel size (patient n=500), in line with VHA Handbook 1101.02 directives for specialty PACT, allowing an increase in standard visit length from 20 to 30 minutes. Both the SMI-PACT registered nurse care manager and primary care provider are trained in the needs of this population, including frequent outreach between appointments and aids to support education around illness self-management. A psychiatrist consults to the SMI-PACT team.

In a site level-controlled trial, SMI PACT is being implemented at one medical center, and compared to existing PACT teams for people with SMI at two other medical centers within the same VISN. The project is studying the effect, relative to usual care, of SMI-PACT on: provision of appropriate preventive and medical treatments; patient health-related quality of life and satisfaction with care; and medical and mental health treatment utilization and costs. The project includes a mixed methods formative evaluation to strengthen the intervention and investigate relationships among organizational context, intervention factors, and patient and provider outcomes

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Research Highlight

Potential Role of Peer Support in Care Management

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The intersection between peer support and care management is of increasing interest to mental health services researchers, leaders, and policymakers. Care management is a key part of team-based mental health care, including mental health care that is delivered in specialty settings or in primary care. Collaborative care, an evidence-based model of primary care, emphasizes ongoing care management for persons with mental health conditions treated in primary care.

Peer support programs are also becoming more widely disseminated. Certified peer specialists, persons who have “lived” mental health treatment experience, and those who have completed a certification program are becoming more commonly employed in the Department of Veterans Affairs and other public mental health systems to support persons receiving mental health care. Peer support is considered a key element of recovery-oriented mental health care, supporting patients in their non-linear recovery journeys by providing social connections, and transferring skills and knowledge. However, to date, potential intersections or synergies between peer support and care management have received only limited attention.

Traditional Peer and Care Manager Roles

Care management programs include activities that assist patients and their informal supporters or caregivers in better managing their medical and mental health conditions. Guided by a care plan developed by team members in conjunction with the patient, care managers might coordinate specialist or auxiliary appointments that support a patient’s health, remind patients about their appointments or accompany them to appointments, and help patients both establish and meet self-identified goals. Care managers also work with patients to improve their self-care for ongoing health

and mental health conditions.

Peers working with patients may complete tasks similar to those outlined above for care managers, although peer roles are often broader and less specified than care manager roles. Peer activities may vary in both content and structure (i.e., they may primarily provide emotional support or share their recovery story, deliver structured curriculum, or provide care management-type services). Peers may also model community living skills and provide key information to patients about community and social resources. By modeling life skills and recovery, peers are thought to promote hope, activation, and support the self-efficacy of the patients with whom they are working.

Peers may be more or less integrated into formal mental health treatment teams. Peers who participate in mutual self-help groups (e.g., Alcoholic Anonymous) have often functioned outside of formal treatment settings. However, certified peer specialists are increasingly functioning as full members of formal treatment teams. In general, only peers who are certified and full members of treatment teams take on care manager tasks and assist in implementing a care plan.

The Evidence for Peer Support in Different Roles, Including Care Manager Roles

Potentially, because of the variety of roles and activities that peers might assume when supporting others with mental health conditions, several recent systematic reviews have reported mixed evidence for the effectiveness of peer support in improving patients’ outcomes.^{1, 2, 3} Several trials of peer support within VA have also reported little benefit compared to usual or enhanced usual care, except for increases in patient activation. A systematic review by Chinman et al. reported that studies that assessed the impact of peers added to usual care services and peers who delivered structured

curricula reported improvements in measures of recovery, empowerment, and hope. In contrast, Pitt et al. found that “add on” peer staff provided little benefit. A systematic review by Llyod-Evans et al. reported low-grade evidence for a reduction in psychiatric symptoms and hospitalizations but more positive, albeit inconsistent, evidence for improvements in hope and empowerment. However, both Lloyd-Evans et al. and Pitt et al., reported no differential effect for peer staff delivering traditional care management services compared to professional staff.

Thus, while the evidence is mixed and limited, peers may do as well as professionals in providing care management type services and may produce improvements in recovery-oriented outcomes, such as activation, hope and empowerment.

Peer support has wide acceptance in the mental health community, and these programs are being further disseminated and expanded within VA and other public sector settings. Currently, over 35 state Medicaid programs reimburse for peer services.

While peer support literature gives preliminary indications that peers who act as care managers might produce patient outcomes similar to professional care managers, additional research on peers in these roles appears warranted. Further defining the types of care management activities where peers function best or where they might even be preferable to professional staff is key to developing an efficient approach to providing these patient-centered services. Identifying synergies between these popular and expanding programs stands to improve patient outcomes.

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Research Highlight

The ED-PACT Tool: Supporting Care Management

Kristina M. Cordasco, MD, MPH, MSHS, and David A. Ganz, MD, PhD, VA Care Coordination QUERI and the HSR&D Center for the Study of Healthcare Innovation, Implementation and Policy, Los Angeles, California

Multiple studies have documented that poor communication leads to poor patient outcomes, or “near misses,” after patients are discharged from hospital care.¹ Researchers have given less attention to the transition of care between emergency department (ED) and ambulatory care settings. However, the limited literature available suggests that patients’ failures to receive follow-up care after being sent home from an ED visit are associated with poor patient outcomes, including return ED visits and hospitalizations.²

In an effort to support care management for patients discharged from the ED at VA Greater Los Angeles Healthcare System (VAGLAHS) and to investigate methods for optimally supporting patients during this vulnerable transition, a team at VAGLAHS embarked on the ED-PACT Tool Quality Improvement Project. This project was initiated as a Veterans Integrated Service Network (VISN) 22 PACT Demonstration Laboratory Innovation, with support from the VA Office of Patient Care Services and continued with support of the Care Coordination QUERI Program. Utilizing Plan-Do-Study-Act cycles, a multi-disciplinary stakeholder workgroup developed, formatively evaluated, and spread the ED-PACT Tool across five primary care locations within VAGLAHS. This tool utilizes a care coordination order within VA’s Computerized Patient Record System (CPRS) to communicate a message with post-ED care recommendations to the PACT Registered Nurse (RN) Care Manager. The PACT RN care manager receives the message and communicates with the primary care provider and other PACT team members to address needed follow-up care.

The ED-PACT Tool facilitates communication using principles that

have been studied and recommended in the literature and by patient safety organizations as “best practices” for supporting effective transitions.³ The ED-PACT Tool leverages CPRS to send communications across care settings, and subsequent messages are embedded in the workflow of the end users. When sending messages, providers use a standardized process and form, which identifies the information needed by the receiver for effectively assuming management of the patient’s care. The last step involves the RN care manager “completing” the order, signaling receipt of the message and thereby creating a “closed loop” communication system.

The VAGLAHS team used quality improvement methods and formative evaluation to guide tool development and deployment. Before implementation, we assessed readiness to participate in the innovation with leadership interviews and RN care manager questionnaires. During deployment, we used an audit and feedback process to monitor adherence with correct use of the tool. We logged all user comments, tracked all failures (i.e., a PACT nurse not acting on a message) and their causes, and used ‘run’ charts to assess weekly variations. We audited a random sample of 150 messages to capture the types of care needs for which messages were sent. We interviewed leaders in two clinics about perceptions of usability and value as well as implementation facilitators and barriers.

Between November 2015 and June 2016, the ED-PACT Tool was used to send 853 messages from the VAGLAHS ED to 35 PACT teamlets across five primary care clinics. Care needs included: symptom recheck (55 percent); care coordination (16 percent); wound care (5 percent); medica-

tion adjustment (5 percent); laboratory recheck (5 percent); radiology follow up (3 percent); and blood pressure recheck (3 percent). On average, nurses successfully acted on 90 percent of messages (weekly range, 72 to 97 percent). Reasons for failure included human error, staffing shortages, and technical errors.

Interviews with clinic leaders revealed that the ED-PACT Tool is perceived to provide substantial benefit for coordinating post-ED care by effectively communicating with patients’ PACT nurses. Leaders also reported that nurse training and “buy-in” facilitated implementation, while insufficient staff presented a barrier. These formative data suggest that implementation of this messaging system between ED and PACT is feasible, although addressing organizational and technical issues would enhance its value. Next steps include identifying contextual factors essential for successful implementation and ascertaining the tool’s potential effect on patients’ clinical outcomes, experience of care, and health care utilization. We are also interested in determining the feasibility of wider adoption of the ED-PACT Tool.

The ED-PACT Tool is unique in leveraging the care management skills of the PACT RN care manager to receive and triage electronic care coordination communications. As asynchronous electronic communications become more widespread, the optimal role of nurses when interfacing with these communications is an area ripe for future research.

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tunity and obligation to inform these issues with methodologically rigorous and evidence-based research and study.

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as well as to identify factors related to successful patient outcomes. This is one of the first projects to systematically implement and evaluate a medical home model for this population.

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