In Brief

Diabetes is a common coexisting chronic condition among older adults that can complicate a hospitalization and transition back to the community. The Transitional Care Model, which offers a set of time-limited, hospital-to-home services coordinated by a master’s-prepared advanced practice nurse, is one option that could improve outcomes for patients with diabetes. A descriptive case study is presented.

Transitions in Care from the Hospital to Home for Patients With Diabetes

Approximately 27% of patients ≥ 65 years of age have diabetes. Diabetes is a common coexisting chronic condition among older adults. In 2007, 22% of all inpatient hospitalization days were incurred by people with diabetes, and for 13%, diabetes was the primary reason for hospitalization. These episodes of care are fraught with problems and often involve multiple transitions between the hospital and other care settings (e.g., short-term stays in skilled nursing facilities or rehabilitation centers) that can result in fragmented care coordination, inadequate symptom management, and poor outcomes.

Transitional Care Model

The Transitional Care Model (TCM), designed by a multidisciplinary team of colleagues at the University of Pennsylvania (Penn) and refined and rigorously tested during the past 20 years, is a proven, widely recognized model of care that transitions patients from the hospital to home (sometimes including an interim stay in a skilled nursing facility) through an episode of acute illness. The TCM has been endorsed by the National Quality Forum as one of 25 national preferred practices for care coordination, as well as by the Coalition for Evidence-Based Policy, which, in
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care.7–9,12 The TCM has been used with pa-
chronic conditions,2,3  the TCM was facilita-
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TCM Case Study
Mr. B. was hospitalized for 7 days.
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in the care of complex, chronically ill patients. Using an
evidence-based care management
approach, these advanced practice
nurses (APNs) provide comprehen-
sive in-hospital planning starting
within 24 hours of admission and
lasting on average through 2 months
of follow-up after the index hospital
discharge. APNs work closely with
patients and family caregivers, phy-
sicians, nurses, social workers, and
other members of the health care
team to implement a transitional
care protocol. The protocol focuses
on developing a patient- and family-
centered plan of care, educating and
training of patients and their caregiv-
ers to self-manage complex care needs,
interrupting health status and quality
of life decline, and disrupting patterns of
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to their primary care providers (PCPs) or specialists, and
telephone availability 7 days/week. Key features of the
TCM are outlined in Table 1. Additional informa-
tion and training on the TCM can be accessed online from http://www.
transitionalcare.info.

To date, the Penn team has com-
completed three National Institutes of
Health–funded randomized, con-
trolled trials (RCTs) 7–9  and one
comparative effectiveness study20
of the TCM with chronically ill older
adults. Findings from these studies
have consistently shown that,
compared to standard care2–9 or alter-
native, less intensive, hospital-based
care interventions,2–8 the TCM resulted
in benefits to older adults, providers,
and payers throughout episodes of
acute illness. For example, in the most
recently reported RCT,9 physical func-
tioning, quality of life, and satisfaction
with care were significantly improved
among patients who received care
through the TCM compared to con-
trol subjects. In addition, the time to
first rehospitalization was lengthened
(median length of time to event: 241
days [TCM] vs. 131 days [control],
Kaplan-Meier log-rank, P = 0.026),
and all-cause hospitalizations were
significantly reduced through 12
months after the index hospital dis-
charge (rehospitalizations/patient/ year: 1.18 [TCM] vs. 1.79 [control],
P < 0.001) at a mean cost savings per
older adult of $5,000.9

Diabetes is often one of several
chronic conditions requiring self-
management.31 For treatment of diabe-
tes to be effective, patients must make
changes to their daily routines (e.g.,
performing self-monitoring of blood
glucose [SMBG] or calculating insulin
doses) and be able to manage diet and
exercise. Given the growing number
of older adults with diabetes1 and the
risk of poor post-hospitalization out-
comes for older adults with multiple,
complex chronic conditions,2,3  the
provision of services that incorporate
a holistic approach to care is an essen-
tial component to engaging patients in
managing their health.

In past and ongoing work,8,9,12 the
TCM has been used with patients with
diabetes either as a primary or coexis-
ting condition (7–38% of subjects in
each study). The following case study
illustrates the use of the TCM with
such patients and describes the appli-
cation of the TCM in transitioning a
patient with newly diagnosed diabetes
from hospital to home.

TCM Case Study
Mr. B. was a 62-year-old African-
American man who was newly
diagnosed with diabetes requiring
insulin therapy. His only relevant
medical history was for hypertension,
which he reported was diagnosed an
unknown number of years before the
hospitalization and for which he was
prescribed a medication he cannot
name and is not regularly taking. One
week before his hospitalization, Mr.
B. was seen in the ED for an upper
respiratory infection.

On the day of the hospitalization,
he awoke with “flu-like” symptoms
and returned to the ED for evaluation.
In triage, his vital signs were stable,
but his blood glucose was 954 mg/dl.
An A1C ordered during his ED visit
was 15.2%. An insulin drip was initi-
ated and transfer to a telemetry bed
was facilitated to best manage his
gross hyperglycemia. During assess-
ment by the APN, Mr. B. denied ever
being told he had “sugar diabetes” and
reported no family history of diabetes.

Mr. B. was identified as a good
candidate for the TCM program and
was seen during the hospitalization
by the APN, who initiated a compre-
sensive needs assessment, including
patient activation (e.g., ability to
change), health literacy, and current
or previous depression, all of which
could significantly affect his success-
ful transition back to the community.
The APN talked with Mr. B. about
his goals for care and learned that he
wanted to better understand what was
happening to him and how to prevent
this from happening again so that he
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He, the APN, and the hospital care
team agreed to delay hospital dis-
charge to maximize the probability
of his success after transition because
of concerns regarding available social
support and access to outpatient care
during a holiday weekend. The APN
visited him every day during his hos-
pitalization and collaborated with his
hospital-based care team to stream-
line the plan of care and design and
coordinate an ongoing plan based on
his identified goals. The APN maxi-
imized hospital resources to provide
this highly motivated patient with the
tools to master SMBG and to gain
understanding of how his eating and
physical activity patterns would affect
his insulin requirements.

The APN assessed Mr. B.’s prefer-
ed learning method and tailored
hospital-specific written educational
materials to his learning needs. The
hospital educational television chan-
nel was also used to reinforce general
diabetes education. The APN collabo-
rated with the hospital-based diabetes
educator, the unit-based clinical nurse
specialist, and staff nurses providing
direct care to Mr. B. to ensure that
consistent, tailored education was
provided and to reduce unnecessary
duplication of efforts. In addition, the
APN worked to provide Mr. B. with
a basic understanding of the 12 new
medications he was prescribed to treat
his diabetes, his previously diagnosed
diabetes, his previously diagnosed
untreated hypertension, and newly
diagnosed high cholesterol and gas-
troesophageal reflux disease (GERD).
The APN worked to integrate all nec-
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The hospital-based care team identified that Mr. B.’s insurance coverage had lapsed because he had exhausted his unemployment insurance benefit and that he had had no specific PCP for more than 10 years. The APN, in collaboration with the hospital discharge planning department, took initial steps in addressing these challenges, which would affect Mr. B.’s short- and long-term outcomes. Mr. B. was returning to a boarding-house setting where there were supportive residents who could informally monitor major changes in his health status but no one who could be considered a family caregiver.

The self-management skills and behavioral changes required of Mr. B. are typical in the treatment of diabetes, hypertension, high cholesterol, and GERD. In practice, these adaptations were a huge undertaking for Mr. B. Thankfully, his basic needs were met, allowing the APN to focus on higher-priority needs specific to his health and well-being.

Before the index hospitalization, Mr. B. did not regularly take medication, have a set activity pattern, follow any dietary guidelines, or eat on a regular schedule. It was crucial that the APN form a connection with Mr. B. to ensure his understanding of and successful adaptation to this life-altering diagnosis. Fortunately, Mr. B. was motivated to make necessary changes to adapt to his new health status and to monitor important symptoms such as hypoglycemia. The APN provided general diet education in concert with the diabetes educator to stress the need for balanced, regular meals to determine appropriate insulin doses.

In total, Mr. B. received eight home visits focusing on incorporating the education he received in the hospital regarding the new diagnosis of diabetes into his daily behaviors. These home visits were augmented with 10 unscripted telephone calls in which the APN monitored Mr. B.’s reported self-management behaviors to help him meet his goals. The APN worked with Mr. B. to develop a written emergency and urgent care plan and a patient health record. Mr. B.’s ability to manage his complex medication regimen and SMBG was verified through teach-back methods, as was his ability to reorder and monitor his medications. Mr. B. scheduled and completed a PCP visit within 10 days of discharge from his index hospitalization and scheduled needed specialty follow-up appointments. His health screening needs were identified and triaged by his PCP and the APN.

After 2 months, Mr. B. was determined to be stable and ready to transition out of the TCM program. The APN developed a plan for transitioning Mr. B. from the intensive TCM program to his own self-management in collaboration with his PCP. This plan included continued education about meals and nutrition, which was realistically grounded in what Mr. B. would be able to prepare in his boarding house, could obtain easily in his neighborhood, and was interested in eating.

During the intervention, Mr. B. had no rehospitalizations but was seen once in the ED for a rapidly developing abscess on his cheek. He was not rehospitalized during the 6 months after his participation in the TCM program ended. After 6 months of active treatment and self-management, Mr. B.’s A1C was <7%. He was able to find employment and incorporate a healthy lifestyle into his new daily routine.

**Lessons Learned**

Mr. B.’s case illustrates three key features of the TCM. First, early intervention during hospitalization is crucial. By connecting with Mr. B. within the first 24–48 hours of hospitalization, the APN was able to establish a relationship with him, complete a comprehensive assessment of his physical and social needs, talk with him about his condition and personal goals (e.g., return to work), and begin to collaboratively develop a plan.
of care that would take him from the hospital to home. Second, the same APN worked with Mr. B. and was available to him and his health care team throughout the intervention. This level of continuity of care from the acute setting to the community with a provider who can monitor and assess the patient’s ability to self-manage provided a holistic approach to managing his multiple chronic conditions. Finally, the patient-centered care plan developed for Mr. B. focused not only on his clinical needs, but also on what was important to him personally. Education about his medications and interactions with the APN and other team members about his eating and exercise habits and other chronic conditions helped this motivated patient with newly diagnosed diabetes take control of his self-care.

Mr. B. received this service during a pilot-test period of a TCM service line provided by a home care agency affiliated with the health system where Mr. B. was admitted. Primary care costs were initially underwritten by Mr. B. was admitted. Primary care affiliated with the health system where line provided by a home care agency a pilot-test period of a TCM service. Although Mr. B. did not pay for these services, the program has been rolled out by the home care agency and is paid for by local insurers for their members.

References
4. Naylor MD, Sochalski JA: Scaling up: bringing the transitional care model into the mainstream. Issue Brief (Commonw Fund) 103:1–12, 2010

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