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THE CARE SPAN

Transitional Care Interventions Prevent Hospital Readmissions For Adults With Chronic Illnesses

ABSTRACT Transitional care interventions aim to improve care transitions from hospital to home and to reduce hospital readmissions for chronically ill patients. The objective of our study was to examine if these interventions were associated with a reduction of readmission rates in the short (30 days or less), intermediate (31–180 days), and long terms (181–365 days). We systematically reviewed twenty-six randomized controlled trials conducted in a variety of countries whose results were published in the period January 1, 1980–May 29, 2013. Our analysis showed that transitional care was effective in reducing all-cause intermediate-term and long-term readmissions. Only high-intensity interventions seemed to be effective in reducing short-term readmissions. Our findings suggest that to reduce short-term readmissions, transitional care should consist of high-intensity interventions that include care coordination by a nurse, communication between the primary care provider and the hospital, and a home visit within three days after discharge.

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Nearly one-fifth of patients who have been discharged from a hospital in the United States are readmitted within thirty days, and almost half of these hospital readmissions are deemed to be preventable.[1,2] The cost of unplanned readmissions has been estimated to be $12–$44 billion per year.[3,4]

Patient-related factors such as multiple chronic illnesses,[5] specific diagnoses (such as heart failure and chronic obstructive pulmonary disease),[6] and hospital readmission in the previous six months increase the risk for readmission.[7] Additionally, organizational factors such as a poorly standardized discharge process,[7,8] lack of timely follow-up arrangements,[8] and poor communication between the hospital and primary care providers in the first weeks after discharge contribute to a higher rate of readmission.[9]

In the United States and England, there is a growing impetus to reorganize the discharge process to reduce avoidable readmissions. In the United States, the Affordable Care Act (ACA) promotes patient safety and quality of care by supporting innovative transitional care services. Ultimately, under the ACA hospitals may not be reimbursed for unplanned readmissions within a thirty-day period.[10] And in England, guidance from the Department of Health has led the National Health Service to introduce a system in which local health commissioners do not pay for emergency readmissions within thirty days of an index hospital admission.[11]

Interventions that target patients who are at risk for readmission based on their risk profile at admission and that promote the safe and timely transfer of patients from hospital to home are often described as transitional care interventions.[12,13] Previous studies of individual dis-

charge interventions[14,15] have shown the beneficial effects of discharge planning, self-management education, and follow-up after discharge on the reduction of hospital readmission rates.

The objective of our systematic review and meta-analysis was to identify and summarize the effectiveness of transitional care interventions, which are a bundle of discharge interventions, on the rates of readmission for patients discharged from a hospital to their home.

We addressed the following research questions: Are transitional care interventions associated with a reduction of short-term (30 days or less), intermediate-term (31–180 days), and long-term (181–365 days) all-cause hospital readmission rates in chronically ill patients, compared to usual care? Are there differences in the effect of transitional care interventions on hospital readmissions with regard to the intensity of the intervention, age and number of patients included in a study, health care system, or date of publication of a study? And what components of transitional care are associated with a reduction of hospital readmission rates?

Study Data And Methods

DATA SOURCES AND SEARCHES We searched PubMed MEDLINE, EMBASE, the Cochrane Library, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) for randomized controlled trials published in the period January 1, 1980–May 29, 2013. The searches were conducted August 31, 2011, and updated May 29, 2013 (for the search strategy we used, see online Appendix Exhibit A1).[16]

Because transitional care interventions are often not defined as such, we chose a broad search strategy, including all types of interventions that addressed hospital readmission. We also reviewed the lists of references in key articles and added relevant items that we found in the lists.

DEFINITION OF 'TRANSITIONAL CARE' *Transitional care* in this systematic review was defined according to the core components of transitional care described by Mary Naylor and coauthors.[10] According to this definition, the main goal of transitional care interventions is to prevent repeated and avoidable readmissions and negative health outcomes after a hospital discharge. The interventions target chronically ill adults or patients at risk for poor outcomes after discharge and their informal caregivers—that is, patients' relatives and friends. The interventions should be initiated during hospital admission and continued after discharge through home visits or telephone follow-up for a minimum of one month.[12]

We defined *high-intensity transitional care interventions* as those with scores of 9–16 on a scale of 0 to 16 by summing eleven measures of intervention intensity (the measures are explained in Appendix Exhibit A6).[16] An important difference between transitional care and disease and case management programs is that transitional care is provided for a limited time, whereas disease and case management involves continuous guidance of chronically ill patients through the duration of the disease.[10,17]

STUDY SELECTION Two of the authors (Kim Verhaegh and Bianca Buurman) independently examined the study titles and abstracts from each article to determine relevance. Any disagreements were resolved by consensus between the two authors. Potentially relevant articles were acquired and full-text articles were independently assessed by both authors.

Readmission was defined as all-cause hospital readmission. The duration of the transitional care intervention had to be between thirty days and one year.

We excluded studies that primarily focused on rehabilitation after a hospitalization. We also excluded articles involving pediatric patients and patients with mental illnesses, because factors contributing to readmission risk might be different in these groups, compared to adults with chronic conditions[18] (for studies we excluded based on a full-text review, see Appendix Exhibit A2).[16]

DATA EXTRACTION Verhaegh and Buurman extracted data from the selected full-text articles. A standardized piloted assessment form was used to record data on study characteristics (authors, publication year, journal, country, study setting, target group and study population, sample size, and follow-up interval) and patient characteristics (mean age and sex).

We extracted data on readmission from the study results, based on each study's initial treatment assignment—that is, its intention to treat. These were classified as being related to short-, intermediate-, or long-term hospital readmissions. Possible random assignments for patients were the intervention group (people who received transitional care interventions) and the control group (people who received care as usual).

In addition, we collected data on the statistical power (power, sample size, and *p* value used for significance) of the individual studies. Data on the nature of transitional care were also collected, including the in-hospital component, such as an assessment at admission; provider continuity, such as care coordination by a nurse; postdischarge follow-up, such as timely communication between the hospital and primary care

provider after discharge; the number of scheduled home visits or telephone follow-up calls; and the total duration of the intervention.

QUALITY ASSESSMENT We used the Cochrane Collaboration's tool for assessing the risk of bias in randomized controlled trials.[19] Verhaegh and Buurman separately assessed each study based on its sequence generation (such as using a computer random number generator); allocation concealment (such as web-based randomization); blinding of participants, members of the research team, and outcome assessors; and sources of bias (such as incomplete outcome data and selective outcome reporting).

DATA SYNTHESIS We used Review Manager software, version 5.1, to pool the original study data on rates of all-cause readmissions. Regarding statistical significance, p values of less than 0.05 were considered significant. For dichotomous outcomes, we used the odds ratio, absolute risk reduction, number needed to treat, and 95% confidence interval, which were computed as summary statistics.

Statistical heterogeneity across studies was evaluated by the Cochrane Q test. Statistical significance for heterogeneity was defined as $p < 0.10$.

We conducted a random-effects meta-analysis using the Mantel-Haenszel method.[20] Analyses were conducted according to each study's intention to treat. We entered the study data for the meta-analyses into Review Manager and sorted participants based on whether they belonged to the intervention group or the control group.

From each study, we therefore extracted the number of patients allocated to the intervention and control groups and the number of patients experiencing one or more readmissions. We then used that information to calculate the odds ratios and absolute risk reduction. We categorized all analyses by the effect on short-, intermediate-, and long-term hospital readmissions. A study could be included only once in each category.

Some studies of intermediate-term readmissions measured multiple endpoints. We selected the endpoint that was indicated as the primary one. If no primary endpoint was clearly defined, we used the ninety-day readmission rate.

We conducted six subgroup analyses, using the following variables: the intensity of interventions, patient's age, patient's primary disease, health care system, date of publication of the study, and total number of included patients. The subgroup analyses were conducted according to the random-effects model, testing the variables one at a time. Other study results are summarized narratively.

To assess the effect on readmission of the different core components of transitional care mentioned above,[10] we conducted univariable meta-regression analyses using the statistical software Stata, version 12. Results of single covariate meta-regression analyses with permutation tests were applied.[21]

To estimate the number of missing studies, we assessed publication bias by Sue Duval and Richard Tweedie's nonparametric "trim-and-fill" method.[22]

LIMITATIONS Hospital readmission was the primary outcome of interest. Only a few studies measured whether readmissions were preventable or were for the same underlying diagnosis. Presumably, this is because a valid and reliable method to assess the preventability of readmission was lacking.[23,24]

We focused only on readmission rates and did not include recurrent readmissions, number of readmission days, or other outcomes. Few studies have reported recurrent readmissions and readmission days or included cost-effectiveness.

In pooled analyses, we identified substantial heterogeneity, indicating variations between studies. Because of this heterogeneity, we conducted a random-effects meta-analysis. To identify sources of heterogeneity, we conducted both subgroup analysis and meta-regression, which revealed some differences between subgroups.

Study Results

STUDY CHARACTERISTICS Online database searches yielded 8,092 articles. We conducted our search strategy according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[25] The search strategy is summarized in Appendix Exhibit A3.[16] Twenty-six randomized controlled trials were included in the meta-analysis (for a list of the included trials, see Appendix Exhibit A4).[16]

Collectively, the twenty-six trials included 7,932 people (3,992 in the intervention groups and 3,940 in the control groups). The trials were conducted in a broad variety of international health care systems. Eleven were from the United States;[26–36] three from Hong Kong;[37–39] two from Australia;[40,41] and one each from Germany,[42] Spain,[43] Canada,[44] Sweden,[45] the United Kingdom,[46] Ireland,[47] Italy,[48] China,[49] Taiwan,[50] and a collaboration between Spain and Belgium.[51]

The studies' sample sizes ranged from 41 to 1,001 people. Eighteen of the twenty-six[26–29,33–36,39,40,42,44–50] were single-center studies. Seventeen[27,30–35,37–42,45,46,49,50] included only patients older than age sixty.

Six[28,30,32,34,36,38] of the twenty-six articles precisely defined *readmission*. Most authors did not specify whether the readmissions were elec-

tive or nonelective, planned or unplanned, or same-cause or all-cause. Furthermore, the duration of follow-up after the initial hospitalization varied widely: Eight studies were of short-term,[27,30–32,36,37,39,44] seventeen of intermediate-term,[27–33,35,37,38,40,41,46–50] and seven of long-term readmissions.[26,31,34,42,43,45,51]

RISK OF BIAS IN INCLUDED STUDIES The allocation process was described in twenty of the twenty-six studies (78 percent)[26–33,35–37,39–45,49,51] (for a summary of methodological quality, see Appendix Exhibit A5).[16] Sixteen (62 percent)[26–28,30,31,33,35–39,43,46,48–50] undertook intention-to-treat analysis according to initial random allocation. Ten (38 percent)[30,37–39,43,44,46,48,49,51] performed power analysis.

TRANSITIONAL CARE INTERVENTIONS The elements of transitional care interventions in each study are shown in Appendix Exhibit A6.[16] In-hospital components of transitional care interventions varied across the studies. Fourteen of them (54 percent)[28,30,31,33–36,39,40–43,46,49] included a comprehensive patient assessment at admission, twenty-one (81 percent)[26,27,29–34,37–40,42–45,47–51] provided self-management education during admission, and fourteen (54 percent)[27–32,34,37,42,43,45,49–51] involved caregivers as secondary re-

cipients of the study intervention. Care coordination by a nurse was present in eighteen studies (69 percent).[26–33,37–41,46,47,49–51]

Only seven studies (27 percent)[28–31,35,43,47] included communication between the hospital and a primary care provider within one week after discharge. On average, studies included three (range: 1–12) scheduled home visits and two (range: 1–13) scheduled telephone follow-up calls.

OVERALL ANALYSIS The primary analysis of unadjusted odds ratios included twenty-six trials with 7,932 participants in all. Our analysis of unadjusted ratios showed that transitional care was associated with an absolute risk reduction of 5 percent in intermediate-term readmissions (OR: 0.77; 95% CI: 0.62, 0.96) and 13 percent in long-term readmissions (OR: 0.58, 95% CI: 0.46, 0.75) (Exhibit 1–3; for an extended version of these exhibits, see Appendix Exhibits A8–A10).[16] However, transitional care was not effective in reducing short-term readmissions (OR: 0.76; 95% CI: 0.52, 1.10).

The number needed to treat was thirty-three, twenty, and eight, respectively, in the three time frames (Exhibits 1–3). The individual study and pooled odds ratios using a random-effects model

EXHIBIT 1

Characteristics Of Twenty-Six Studies Of Transitional Care Interventions, Short-Term Readmission Rate

Characteristic	Studies	Number I/C	OR[a]	p value	NNT
All studies	10	1,629/1,694	0.76	0.01	33
INTENSITY OF INTERVENTION					
High	7	1,190/1,217	0.59	0.03	20
Low	3	439/477	1.30	0.51	33
MEAN AGE OF STUDY POPULATION (YEARS)					
Older than age 60	8	1,365/1,416	0.66	0.01	25
Age 18 or older	2	264/278	1.24	0.27	33
TYPE OF PRIMARY DISEASE					
Heart failure, COPD, asthma	3	237/249	0.68	0.04	33
Conditions treated by general internal or surgical medicine	7	1,392/1,445	0.77	0.01	33
REGION					
Europe	0	—[b]	—[b]	—[b]	—[b]
North America and Australia	8	1,220/1,268	0.67	0.01	25
Asia	2	409/426	1.03	0.08	50
DATE OF STUDY PUBLICATION					
2002 or before	2	266/278	0.49	0.03	14
After 2002	8	1,363/1,416	0.84	0.02	50
NUMBER OF PATIENTS					
Fewer than 100	4	266/284	0.74	0.07	25
100–200	4	645/692	0.74	0.00	50
More than 200	2	718/718	0.71	0.70	33

SOURCE Authors' analysis of the studies in Notes 26–51 in text. **NOTES** Short-term readmission rate is 30 days or less. Studies can be included in multiple categories. Significance for heterogeneity was defined as $p < 0.10$. For further information on random effects meta-analysis, see Appendix Exhibit A8 (Note 16 in text). "Number I/C" is number of subjects with an evaluable outcome who were allocated to the intervention versus the control group. NNT is number needed to treat. COPD is chronic obstructive pulmonary disease. [a]Odds ratios (ORs) for rate of readmission of less than 1.00 indicate decreased risk of readmission. [b]Not applicable.

EXHIBIT 2

Characteristics Of Twenty-Six Studies Of Transitional Care Interventions, Intermediate-Term Readmission Rate

Characteristic	Studies	Number I/C	OR[a]	p value	NNT
All studies	18	2,884/2,754	0.77	0.00	20
INTENSITY OF INTERVENTION					
High	14	1,806/1,701	0.69	0.00	14
Low	4	1,078/1,053	0.94	0.65	100
MEAN AGE OF STUDY POPULATION (YEARS)					
Older than age 60	15	2,461/2,434	0.74	0.00	20
Age 18 or older	3	423/296	0.83	0.03	20
TYPE OF PRIMARY DISEASE					
Heart failure, COPD, asthma	9	946/968	0.90	0.02	33
Conditions treated by general internal or surgical medicine	9	1,938/1,786	0.65	0.00	14
REGION					
Europe	3	614/587	0.82	0.02	20
North America and Australia	11	1,988/1,869	0.74	0.00	20
Asia	4	282/298	0.88	0.04	50
DATE OF STUDY PUBLICATION					
2002 or before	5	1,012/988	0.66	0.00	14
After 2002	13	1,872/1,766	0.80	0.00	25
NUMBER OF PATIENTS					
Fewer than 100	6	340/358	0.43	0.00	8
100–200	8	1,130/1,169	0.82	0.05	33
More than 200	4	1,414/1,227	0.87	0.40	33

SOURCE Authors' analysis of the studies in Notes 26–51 in text. **NOTES** Intermediate-term readmission rate is 31–180 days. Studies can be included in multiple categories. Significance for heterogeneity was defined as $p < 0.10$. For further information on random effects meta-analysis, see Appendix Exhibit A8 (Note 16 in text). "Number I/C" is number of subjects with an evaluable outcome who were allocated to the intervention versus the control group. NNT is number needed to treat. COPD is chronic obstructive pulmonary disease. [a]Odds ratios (ORs) for rate of readmission of less than 1.00 indicate decreased risk of readmission.

are plotted in Appendix Exhibit A7.[16]

SUBGROUP ANALYSIS High-intensity interventions were associated with reduced short-term (OR: 0.59; 95% CI: 0.38, 0.92), intermediate-term (OR: 0.69; 95% CI: 0.51 0.92), and long-term readmissions (OR: 0.57; 95% CI: 0.35, 0.92) (Exhibits 1–3). The absolute risk reduction for these interventions was 5 percent for short-term, 7 percent for intermediate-term, and 13 percent for long-term readmissions. For the three periods, the number needed to treat was twenty, fourteen, and eight, respectively. Meta-analysis of low-intensity interventions showed that they were significantly associated only with reduced long-term readmission (OR: 0.62; 95% CI: 0.46, 0.82).

Transitional care was associated with a 5 percent lower rate of intermediate-term readmission (OR: 0.74; 95% CI: 0.59, 0.93) and an 8 percent lower rate of long-term readmission (OR: 0.71; 95% CI: 0.56, 0.91) in patients older than age sixty (Exhibits 1–3).

Subgroup analysis based on health care systems showed no evidence that transitional care was associated with a reduction of short-term readmissions in specific health care systems.

META-REGRESSION Appendix Exhibit A11[16] contains the results of univariable meta-regression analyses on the association between intervention components as presented in Appendix Exhibit A6[16] and readmission in the short, intermediate, and long terms. These analyses demonstrate that care coordination by a nurse (OR: 0.60; 95% CI: 0.37, 0.98; $p = 0.04$), communication between the hospital and the primary care provider (OR: 0.33; 95% CI: 0.12, 0.87; $p = 0.03$), and a home visit within three days of discharge (OR: 0.44; 95% CI: 0.26, 0.76; $p < 0.001$) were significantly associated with reduced rates of short-term readmission.

ANALYSIS OF PUBLICATION BIAS For all of the outcomes, the analysis demonstrated that no studies were missing and that the pooled odds ratios did not change. This indicates that publication bias was not present.

Discussion

The results of this meta-analysis demonstrate that transitional care interventions are associated with reduced intermediate-term (31–180 days) and long-term (181–365 days) all-cause hospital readmissions of chronically ill patients. In subgroup analyses, we found that only high-intensi-

EXHIBIT 3

Characteristics Of Twenty-Six Studies Of Transitional Care Interventions, Long-Term Readmission Rate

Characteristic	Studies	Number I/C	OR[a]	p value	NNT
All studies	7	792/881	0.58	0.18	8
INTENSITY OF INTERVENTION					
High	3	422/436	0.57	0.05	8
Low	4	370/445	0.62	0.43	8
MEAN AGE OF STUDY POPULATION (YEARS)					
Older than age 60	4	513/571	0.71	0.64	13
Age 18 or older	3	279/310	0.41	0.70	5
TYPE OF PRIMARY DISEASE					
Heart failure, COPD, asthma	4	412/451	0.49	0.56	6
Conditions treated by general internal or surgical medicine	3	380/430	0.68	0.17	11
REGION					
Europe	4	449/515	0.53	0.08	7
North America and Australia	3	343/366	0.67	0.62	10
Asia	0	—[b]	—[b]	—[b]	—[b]
DATE OF STUDY PUBLICATION					
2002 or before	2	220/251	0.75	0.36	14
After 2002	5	572/630	0.53	0.21	7
NUMBER OF PATIENTS					
Fewer than 100	2	115/136	0.46	0.54	5
100–200	5	677/745	0.61	0.12	8
More than 200	0	—[b]	—[b]	—[b]	—[b]

SOURCE Authors' analysis of the studies in Notes 26–51 in text. **NOTES** Long-term readmission rate is 181–365 days. Studies can be included in multiple categories. Significance for heterogeneity was defined as $p < 0.10$. For further information on random effects meta-analysis, see Appendix Exhibit A8 (Note 16 in text). "Number I/C" is number of subjects with an evaluable outcome who were allocated to the intervention versus the control group. NNT is number needed to treat. COPD is chronic obstructive pulmonary disease. [a]Odds ratios (ORs) for rate of readmission of less than 1.00 indicate decreased risk of readmission. [b]Not applicable.

ty interventions were associated with reduced short-term (30 days or less) readmissions. Moreover, transitional care was most effective among people older than age sixty and those admitted to general internal medicine units. We did not find differences across international health care systems with regard to the effectiveness of transitional care.

We also found that a home visit within three days, care coordination by a nurse (most frequently a registered nurse or advanced-practice nurse), and communication between the hospital and the primary care provider were components of transitional care that were significantly associated with reduced short-term readmission rates.

The United States and the United Kingdom have recently implemented policies to reduce thirty-day readmission rates. In the United States, section 3025 of the ACA provides penalties and reduces reimbursements for hospitals whose readmission rates are higher than the national average for heart failure, acute myocardial infarction, and pneumonia. The numbers of diagnoses affected as well as the severity of the penalties will increase during the next several years. In the United Kingdom, the National Health Service implemented a similar policy

that reimburses hospitals for only one-third of the hospitalization cost for same-cause readmissions.[11]

Our meta-analysis suggests that to prevent thirty-day readmissions, transitional care interventions should be of high intensity and should consist of at least care coordination by a nurse, communication between the hospital and primary care provider, and a home visit within three days of discharge. These are also core components in the definition of *transitional care* provided by Naylor and coauthors.[10]

A home visit within three days of discharge by a nurse can address specific health care needs related to symptoms that patients experience. In addition, if the nurse performs a medication reconciliation, the number of adverse drug events can be reduced.

A new *Current Procedural Terminology* (CPT) code for transitional care[52] has been implemented in the United States. This means that physicians and other practitioners (clinical nurse specialists, midwives, nurse practitioners, and physician assistants) can furnish transitional care services. Under the law, these practitioners must contact the patient within two business days by telephone or e-mail or face to face and must visit the patient within seven to four-

teen days, depending on the complexity of decision making. In addition, the practitioner needs to perform some non-face-to-face services, such as reviewing discharge information and test results that were not available when the patient was discharged from the hospital.

As noted above, there is evidence that a home visit within three days of discharge can reduce rates of readmission. However, the time frame defined by the CPT code—seven or fourteen days—might be too long to effectively reduce the rates.

In our overall analysis, we found that transitional care had an impact only on intermediate- and long-term readmission rates. Three reasons might explain this result.

First, different approaches might be needed to prevent readmissions in the short, intermediate, and long terms. Patients are most vulnerable for readmission in the first weeks after hospital discharge. That is because in this period many people experience symptoms such as fatigue, memory problems, malnutrition, reduced ability to perform activities of daily living, and muscle weakness.[53] Therefore, to reduce short-term hospital readmission, high-intensity interventions might be needed, such as a home visit within three days of discharge. To prevent intermediate- and long-term readmissions, care coordination by a nurse could be more important. In fact, most interventions that had an effect on intermediate- and long-term readmissions did provide care coordination.

Second, most[27,29,30,32,34–39,42,43,45,47–49,51] of the transitional care interventions that showed an effect on intermediate- and long-term readmissions lasted longer than thirty days and measured the intermediate- and long-term rates of readmission only after thirty days. These interventions could also have had an effect within the first thirty days, but this was not measured.

The third possible explanation for the association of low-intensity interventions and reduced rates of readmission after more than 181 days is that three out of five low-intensity studies focused on patients ages eighteen or older. In people ages 18–25 the absolute risk reduction of readmission was also higher, compared to those older than age sixty. Patients in the older group often have multiple illnesses and geriatric conditions, which leads to the need for coordinated care.[54,55] Long-term readmissions might be more difficult to prevent in older patients. However, we did find a small but significant effect on long-term hospital readmissions (an 8 percent reduction).

Future studies on reducing readmissions should focus on several aspects of providing transitional care. Besides interventions provided to individual patients, systemwide interventions focused on bundled payment and shared savings are of interest to policy makers and health care providers.[3,56]

Furthermore, a stronger primary care structure could improve the performance of health systems.[57] For example, within the UK National Health Service, greater availability of community-based care has been shown to be associated with reduced readmission rates.[58]

In addition, developing a valid and reliable method to measure the preventability of a readmission is important. Doing so would enable clinicians and researchers to implement targeted readmission policies and penalties for those readmissions that really could have been prevented. Most interventions in our study did not implement telehealth interventions, but these might help reduce readmission rates.

Under section 3026 of the ACA, many US health care organizations are experimenting with transitional care programs. The ideal content of these programs and their target group are still unclear. The results of our study could be used to formulate an evidence-based transitional care program for adults with chronic diseases.

Conclusion

The results of this meta-analysis suggest that transitional care interventions are associated with reduced hospital readmissions in the intermediate and long terms. We found that high-intensity transitional care interventions were associated with reduced readmissions in the short, intermediate, and long terms. Transitional care was associated with a reduced rate of readmission in patients older than age sixty. New studies should consider the early effects of transitional care by examining the rates of readmission in the short term and including more information on the cost-effectiveness of these interventions. ∎

NOTES

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16 To access the Appendix, click on the Appendix link in the box to the right of the article online.

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