

Criteria for Referral to Home Care: A Rapid Review

Health Quality Ontario

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Evidence Development and Standards Branch at Health Quality Ontario

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Conflict of Interest Statement

All authors in the Evidence Development and Standards branch at Health Quality Ontario are impartial. There are no competing interests or conflicts of interest to declare.

Rapid Review Methodology

Rapid reviews are completed in 2-4-week time frames. Clinical questions are developed by the Evidence Development and Standards branch at Health Quality Ontario, in consultation with experts, end users, and/or applicants in the topic area. A systematic literature search is then conducted to identify relevant systematic reviews, health technology assessments, and meta-analyses. The methods prioritize systematic reviews, which, if found, are rated by AMSTAR to determine the methodological quality of the review. If the systematic review has evaluated the included primary studies using the GRADE Working Group criteria (<http://www.gradeworkinggroup.org/index.htm>), the results are reported and the rapid review process is complete. If the systematic review has not evaluated the primary studies using GRADE, the primary studies in the systematic review are retrieved and the GRADE criteria are applied to 2 outcomes. If no systematic review is found, then RCTs or observational studies are included, and their risk of bias is assessed. All rapid reviews are developed and finalized in consultation with experts.

About Health Quality Ontario

Health Quality Ontario is an arms-length agency of the Ontario government. It is a partner and leader in transforming Ontario's health care system so that it can deliver a better experience of care, better outcomes for Ontarians, and better value for money.

Health Quality Ontario strives to promote health care that is supported by the best available scientific evidence. The Evidence Development and Standards branch works with expert advisory panels, clinical experts, scientific collaborators, and field evaluation partners to conduct evidence-based reviews that evaluate the effectiveness and cost-effectiveness of health interventions in Ontario.

Based on the evidence provided by Evidence Development and Standards and its partners, the Ontario Health Technology Advisory Committee—a standing advisory subcommittee of the Health Quality Ontario Board—makes recommendations about the uptake, diffusion, distribution, or removal of health interventions to Ontario's Ministry of Health and Long-Term Care, clinicians, health system leaders, and policy-makers.

Health Quality Ontario's research is published as part of the *Ontario Health Technology Assessment Series*, which is indexed in MEDLINE/PubMed, Excerpta Medica/Embase, and the Centre for Reviews and Dissemination database. Corresponding Ontario Health Technology Advisory Committee recommendations and other associated reports are also published on the Health Quality Ontario website. Visit <http://www.hqontario.ca> for more information.

About Health Quality Ontario Publications

To conduct its rapid reviews, Evidence Development and Standards and its research partners review the available scientific literature, making every effort to consider all relevant national and international research; collaborate with partners across relevant government branches; consult with expert advisory panels, clinical and other external experts, and developers of health technologies; and solicit any necessary supplemental information.

In addition, Evidence Development and Standards collects and analyzes information about how a health intervention fits within current practice and existing treatment alternatives. Details about the diffusion of the intervention into current health care practices in Ontario add an important dimension to the review. Information concerning the health benefits, economic and human resources, and ethical, regulatory, social, and legal issues relating to the intervention may be included to assist in making timely and relevant decisions to optimize patient outcomes.

Disclaimer

This rapid review is the work of the Evidence Development and Standards branch at Health Quality Ontario, and is developed from analysis, interpretation, and comparison of published scientific research. It also incorporates, when available, Ontario data and information provided by experts. As this is a rapid review, it may not reflect all the available scientific research and is not intended as an exhaustive analysis. Health Quality Ontario assumes no responsibility for omissions or incomplete analysis resulting from its rapid reviews. In addition, it is possible that other relevant scientific findings may have been reported since completion of the review. This report is current as of the date of the literature search specified in the Research Methods section. Health Quality Ontario makes no representation that the literature search captured every publication that was or could be applicable to the subject matter of the report. This rapid review may be superseded by an updated publication on the same topic. Please check the Health Quality Ontario website for a list of all publications: <http://www.hqontario.ca/evidence/publications-and-ohnac-recommendations>.

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List of Abbreviations

AMSTAR	Assessment of Multiple Systematic Reviews
ED	Emergency department
GRADE	Grading of Recommendations Assessment, Development, and Evaluation
RCT	Randomized controlled trial

Background

As legislated in Ontario's *Excellent Care for All Act*, Health Quality Ontario's mandate includes the provision of objective, evidence-informed advice about health care funding mechanisms, incentives, and opportunities to improve quality and efficiency in the health care system. As part of its Quality-Based Procedures (QBP) initiative, Health Quality Ontario works with multidisciplinary expert panels (composed of leading clinicians, scientists, and administrators) to develop evidence-based practice recommendations and define episodes of care for selected disease areas or procedures. Health Quality Ontario's recommendations are intended to inform the Ministry of Health and Long-Term Care's Health System Funding Strategy.

For more information on Health Quality Ontario's Quality-Based Procedures initiative, visit www.hqontario.ca.

Objective of Analysis

The objective of this rapid review is to identify evidence-based criteria regarding when to refer a patient for home care services.

Clinical Need and Target Population

Home care refers to a diverse number of services that can be provided in the home. It encompasses many disciplines of care including, but not limited to, nursing, physiotherapy, occupational therapy, speech language pathology, social work, and personal support services. Many people will require some degree of home care support at some time in their lives. Deciding when a patient needs home care can be a challenging determination for health care providers to make—and it is always an important one. As stated by Bowles et al (2003), “[w]hen referrals are missed and patients discharged with unmet needs, patients often experience poor post-discharge outcomes...” (1)

According to the Ontario Association of Community Care Access Centres (OACCAC), there were 532,000 home care visits in Ontario in 2012/2013. (2) As the population ages, the need for home care services will continue to increase. Thus, knowing when and whom to refer to home care is critical because it is a limited resource that needs to be managed effectively to provide the highest quality of care to the most patients.

A recent American study by Holland et al (3) surveyed post-discharge patients about their transitions from hospital to home. None of the patients surveyed had been referred to home care upon discharge. More than 30% of them were unaware of how to access nursing care at home or personal support assistance once they were home.

Referrals to home care can also be made from emergency departments (EDs) for patients being discharged home from there. In 2009, McCusker et al (4) conducted a review of seniors being discharged from EDs in Quebec and found that 21% of them returned to the ED within 30 days. The investigators reported that those who were discharged from smaller EDs had higher rates of satisfaction with home care and with the transmission of information (smaller EDs meaning those with less than 14 beds, usually based in health centres rather than hospitals, and usually in rural areas). In another study of factors related to repeat ED visits, Naughton et al (5) looked at 306 elderly patients in Ireland. They found that 48% of

them were discharged from the ED with no documented referral to community services (including to a primary care provider) and that, of this group, 38% had been admitted to hospital or had at least 1 other ED visit within the past 6 months.

Rapid Review

Research Question

What criteria should be used to determine when to refer a patient for home care services?

Research Methods

Literature Search

Search Strategy

A literature search was performed on February 19, 2014, using Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, EBSCO Cumulative Index to Nursing & Allied Health Literature (CINAHL), and EBM Reviews, for studies published from January 1, 2000, to February 19, 2014. (Appendix 1 provides details of the search strategies.) Abstracts were reviewed by a single reviewer and, for those studies meeting the eligibility criteria, full-text articles were obtained. Reference lists were also examined for any additional relevant studies not identified through the search.

Inclusion Criteria

- English-language full-text publications
- published between January 1, 2000, and February 19, 2014
- observational studies, randomized controlled trials (RCTs), systematic reviews, and meta-analyses
- referrals to home care from hospital, emergency departments, or primary care

Exclusion Criteria

- studies predominantly of children
- case studies, editorials

Outcomes of Interest

- quality of life
- health resource utilization (hospital readmissions, ED visits)
- avoidance or delay of long-term care home admission

Expert Panel

In December 2013, an Expert Advisory Panel on Post-Acute, Community-Based Care for CHF Patients was struck. Members of the community-based panels included family physicians, physician specialists, community health care administrators, and allied health professionals.

The role of the expert advisory panel was to provide advice on primary CHF patient groupings; to review the evidence, guidance, and publications related to defined CHF patient populations; to identify and prioritize interventions and areas of community-based care; and to advise on the development of a care pathway model. The role of panel members was to provide advice on the scope of the project, the

methods used, and the findings. However, the statements, conclusions, and views expressed in this report do not necessarily represent the views of the expert panel members.

Quality of Evidence

The methodology for a rapid review of primary studies assesses the quality of the evidence through a risk of bias assessment of the individual studies in the review including allocation concealment, blinding, accounting of patients and outcome events, selective reporting bias and other limitations. (6) A full quality of evidence assessment is not typically performed, due to the time limitations associated with rapid reviews.

Results of Rapid Review

The database search yielded 444 citations published between January 1, 2000, and February 19, 2014, (with duplicates removed). Articles were excluded based on information in the title and abstract. The full texts of potentially relevant articles were obtained for further assessment.

Four observational studies were identified that met the inclusion criteria. The reference lists of the included studies and health technology assessment websites were hand-searched to identify other relevant studies.

For each included study, the study design was identified and is summarized below in Table 1, a modified version of a hierarchy of study design by Goodman, 1996. (7)

Table 1: Body of Evidence Examined According to Study Design

Study Design	Number of Eligible Studies
RCTs	
Systematic review of RCTs	
Large RCT	
Small RCT	
Observational Studies	
Systematic review of non-RCTs with contemporaneous controls	
Non-RCT with non-contemporaneous controls	
Systematic review of non-RCTs with historical controls	
Non-RCT with historical controls	
Database, registry, or cross-sectional study	
Case series	3
Retrospective review, modelling	1
Studies presented at an international conference	
Expert opinion	
Total	4

Of the 4 studies included in this rapid review (1, 8-10), 3 have the same lead author, Dr. Kathryn Bowles. These studies are distinct, however, with different methods and participants. The risk of bias assessment

of the 4 observational studies indicated that all of the studies had some limitations, including post-hoc study design, and providing expert opinion as the outcome, rather than actual patient experience.

The most recent study included is an observational study by Bowles et al from 2009. (8) It looked for the factors predicting home care referral, and was based on expert consultation. The experts named the following 6 predictors: limited informal support at home; major walking restrictions; less than excellent self-rated health; longer hospital stay; higher depression score; and higher number of co-morbidities. Unfortunately, no actual patient outcomes were reported in this study, so there is no way to measure the accuracy of the predictors.

Employing a similar study design, Narsavage and Naylor (10) conducted a retrospective review of patients from 3 different studies who were receiving home care, and analyzed which characteristics resulted in a referral to home care. They found 4 predictors that led to an increased likelihood of a referral: having both congestive heart failure and chronic obstructive pulmonary disease; needing personal support assistance; being unmarried; and having a length of stay longer than 6 days. Similar to the Bowles et al study from 2009 (8), the major limitation of this study was the impossibility of knowing whether the patients were appropriately referred to home care. Furthermore, there were no outcomes regarding the rate of hospital readmission or the delay of long-term care admission for patients who received home care compared with those who did not.

In 2003, Bowles et al (1) conducted a qualitative research study to analyze the home care referral patterns of various health care professionals including nurses, social workers, discharge planners, and physicians. Professionals were asked to comment on 4 cases: 2 with poor outcomes (multiple repeat ED visits, hospital readmissions, death) and 2 without poor outcomes. The patients in all 4 cases had an average of 4 chronic conditions and 4 medications, and had been hospitalized for a cardiac or pulmonary condition. The health care professionals were given detailed medical records for each case. They were asked if they would refer the patient for home care and, if so, which services they would recommend. Based on the professionals' responses, the investigators identified 3 broad themes regarding why patients with unmet needs might not receive home care referrals. They described the themes as follows (1):

- Patient characteristics
 - included patients who looked fine or refused help, patients with a short length of stay, patients who appeared functionally able (“bluffing”), and patients “beyond help” or too “difficult” to refer for home care services (i.e., either non-compliant or requiring more assistance than home care services can provide)
- Workload and staffing
 - included lack of teamwork, lack of time, concern that referral would delay discharge, weekend discharge
- Education
 - included insufficient knowledge of the discharge process or of community services, lack of documentation, lack of a systematic approach to identifying patients for referral

Then in 2008 Bowles et al (9) published a secondary analysis of an RCT comparing patients who were referred to home care after cancer surgery with those who were not. The investigators' outcomes of interest were hospital readmission, decline in functionality, and death within 12 weeks of discharge. They looked at the characteristics of patients who were not referred for home care and who went on to have poor outcomes. They found that patients in this group were more likely to have had a length of stay longer than 1 week, be under 70 years of age, have no problem with concentration, and be receiving adjuvant care. In addition, these patients were less likely to need skilled home care (e.g., nursing, physiotherapy, occupational therapy). It is logical to assume, though, that they may have benefited from a personal support worker's help with bathing, laundry, cleaning, and other activities of daily living.

These studies by Bowles et al in 2003 (1) and 2008 (9) reached interesting and similar findings through different methodologies. The qualitative study in 2003 (1) found that patients who “looked fine” or appeared functionally able were less likely to be referred to home care than patients with an obvious need for services. The 2008 study (9) found that patients who were not referred to home care after hospitalization for cancer surgery, and who went on to have poor outcomes, were more likely to be younger and have no problems with concentration and no need for skilled home care. In other words, they too “looked fine,” thus echoing the findings of the earlier study.

Table 2: Summary of Included Studies on Criteria for Referral to Home Care

Author, Year	Study Design	Sample Size (Description of Population)	Description of Study	Results/Conclusions
Bowles et al, 2009 (8)	Observational study	355 (hospitalized older adults)	Need for referral defined by expert consultation.	<p>Factors predicting referral to home care:</p> <ul style="list-style-type: none"> • No/limited informal support at home • Major walking restrictions • Less than excellent self-rated health • Longer hospital stay • Higher depression score • Higher number of co-morbidities
Bowles et al, 2008 (9)	Secondary analysis of RCT	375 (127 not referred for home care) (hospitalized adults > 60 years admitted for solid tumour cancer surgery)	Multiple logistic regression related home care referral to poor discharge outcomes.	<p>27 patients (21%) had poor outcomes at 12 weeks. Correlates of poor discharge outcome among patients who were not referred to home care:</p> <ul style="list-style-type: none"> • Length of stay > 1 week • Age < 70 • Without need for skilled care • No problem with concentration • Receiving adjuvant treatment
Bowles et al, 2003 (1)	Qualitative study	6 (health care professionals)	Health care professionals reviewed 4 cases.	Identified 3 themes: Patient characteristics, workload and staffing, education.
Narsavage and Naylor, 2000 (10)	Retrospective review	159 (adults > 65 years)	Multiple logistic regression identified predictors of post-discharge referral to home care.	<p>Predictors of receiving home care:</p> <ol style="list-style-type: none"> 1. Having both CHF and COPD 2. Needing personal support assistance 3. Not married 4. Length of stay > 6 days

Abbreviations: CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease.

Conclusions

The criteria for referring patients to home care is unclear. With the exception of 1 study based on expert consultation, we found no studies that explicitly defined criteria for referral; instead, studies attempted to define predictors for the need of home care services.

Based on the results of 4 observational studies, each with its own limitations, patients without an obvious need for home care services are the ones who may be overlooked and may experience poor outcomes as a result. Older patients and those with major mobility limitations, longer hospital stays, and more co-morbidities are more likely to be referred to home care than those with less obvious need.

Acknowledgements

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Appendices

Appendix 1: Literature Search Strategies

Search date: February 19, 2014

Databases searched: OVID MEDLINE, MEDLINE In-Process and Other Non-Indexed Citations, All EBM Databases (see below), CINAHL

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to December 2013>, EBM Reviews - ACP Journal Club <1991 to January 2014>, EBM Reviews - Database of Abstracts of Reviews of Effects <1st Quarter 2014>, EBM Reviews - Cochrane Central Register of Controlled Trials <January 2014>, EBM Reviews - Cochrane Methodology Register <3rd Quarter 2012>, EBM Reviews - Health Technology Assessment <1st Quarter 2014>, EBM Reviews - NHS Economic Evaluation Database <1st Quarter 2014>, Ovid MEDLINE(R) <1946 to February Week 1 2014>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 18, 2014>

Search Strategy:

#	Searches	Results
1	exp Patient Discharge/	19216
2	exp Aftercare/ or exp Convalescence/	10054
3	"Continuity of Patient Care"/ or exp "Recovery of Function"/	46227
4	((patient* adj2 discharge*) or after?care or post medical discharge* or post?discharge* or convalescen*).ti,ab.	36832
5	exp Stroke/	85027
6	exp brain ischemia/ or exp intracranial hemorrhages/	129002
7	(stroke or poststroke or tia or transient ischemic attack or ((cerebral vascular or cerebrovascular) adj (accident* or infarct*)) or CVA or cerebrovascular apoplexy or brain infarct* or (brain adj2 isch?emia) or (cerebral adj2 isch?emia) or (intracranial adj2 h?emorrhag*) or (brain adj2 h?emorrhag*).ti,ab.	195049
8	exp Heart Failure/	89257
9	((cardia? or heart) adj (decompensation or failure or incompetence or insufficiency)) or cardiac stand still or ((coronary or myocardial) adj (failure or insufficiency)).ti,ab.	130161
10	exp Pulmonary Disease, Chronic Obstructive/	36493
11	exp Emphysema/	10699
12	(copd or coad or chronic airflow obstruction* or (chronic adj2 bronchitis) or emphysema).ti,ab.	56219
13	(chronic obstructive adj2 (lung* or pulmonary or airway* or airflow* or respiratory or bronchopulmonary) adj (disease* or disorder*).ti,ab.	34637
14	exp Pneumonia/	74413
15	(pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) adj inflammation*).ti,ab.	137338
16	or/1-15	752690
17	exp "Referral and Consultation"/	57178
18	exp Needs Assessment/	21862
19	(referral* or (refer* adj4 home care)).ti,ab.	70337
20	or/17-19	132268
21	16 and 20	8529
22	exp Home Care Services/	41032
23	exp Home Care Agencies/ or exp Home Health Aides/ or exp House Calls/	4275
24	((home or domicil* or communit*) adj2 (visit* or care or caring or caregiver* or healthcare or assist* or aid* or agenc* or service* or rehabilitation)) or homecare or homemaker service* or home nurs* or meals on wheels).ti,ab.	52032
25	or/22-24	79006
26	21 and 25	755
27	limit 26 to yr="2000 -Current" [Limit not valid in DARE; records were retained]	514
28	limit 27 to english language [Limit not valid in CDSR,ACP Journal Club,DARE,CCTR,CLCMR; records were retained]	473
29	remove duplicates from 28	444

CINAHL

#	Query	Results
S1	(MH "Patient Discharge+") or (MH "After Care") or (MH "Recovery") or (MH "Continuity of Patient Care+")	45,293
S2	((patient* N2 discharge*) or aftercare or after care or post medical discharge* or postdischarge* or post discharge* or convalescen*)	29,381
S3	(MH "Stroke+") or (MH "Cerebral Ischemia+") or (MH "Intracranial Hemorrhage+") or (MH "Stroke Patients")	49,543
S4	(stroke or poststroke or tia or transient ischemic attack or ((cerebral vascular or cerebrovascular) N1 (accident* or infarct*)) or CVA or cerebrovascular apoplexy or brain infarct* or ((brain or cerebral) N2 (ischemia or ischaemia)) or ((intracranial or brain) N2 (hemorrhag* or haemorrhag*)))	61,720
S5	(MH "Heart Failure+")	22,525
S6	((cardia* or heart) N1 (decompensation or failure or incompetence or insufficiency)) or cardiac stand still or ((coronary or myocardial) N1 (failure or insufficiency))	29,142
S7	(MH "Pulmonary Disease, Chronic Obstructive+") or (MH "Emphysema+")	11,559
S8	((chronic obstructive N2 (lung* or pulmonary or airway* or airflow* or respiratory or bronchopulmonary) N1 (disease* or disorder*)) or (copd or coad or chronic airflow obstruction* or (chronic N2 bronchitis) or emphysema))	14,705
S9	(MH "Pneumonia+")	12,497
S10	(pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) N1 inflammation*))	19,509
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10	175,149
S12	(MH "Referral and Consultation+")	22,057
S13	(MH "Needs Assessment")	10,156
S14	referral* or (refer* N4 home care)	34,222
S15	S12 OR S13 OR S14	44,979
S16	S11 AND S15	3,834
S17	(MH "Home Health Care+")	32,989
S18	(MH "Home Health Aides") or (MH "Home Health Agencies") or (MH "Home Nursing")	8,189
S19	((home or domicil* or communit*) N2 (visit* or care or caring or caregiver* or healthcare or assist* or aid* or agenc* or service* or rehabilitation)) or homecare or homemaker service* or home nurs* or meals on wheels)	94,223
S20	S17 OR S18 OR S19	99,472
S21	S16 AND S20	677
S22	S16 AND S20 Limiters - Published Date: 20000101-20141231; English Language	486

Appendix 2: Evidence Quality Assessment

Table A1: Risk of Bias Among Observational Trials for Referral to Home Care

Author, Year	Appropriate Eligibility Criteria	Appropriate Measurement of Exposure	Appropriate Measurement of Outcome	Adequate Control for Confounding	Complete Follow Up
Bowles et al, 2009 (8)	Limitations ^a	No limitations	No limitations	Limitations ^b	No limitations
Bowles et al, 2008 (9)	No limitations	No limitations	No limitations	Limitations ^c	No limitations
Bowles et al, 2003 (1)	No limitations	No limitations	No limitations	Limitations ^d	No limitations
Narsavage & Naylor, 2000 (10)	No limitations	No limitations	No limitations	Limitations ^b	No limitations

^a Recruitment was changed after study had begun—so both retrospective and prospective cases were included.

^b The outcomes are based entirely on expert consultation; there are no actual outcomes reported. It is therefore not clear whether patients' health outcomes were affected by their having/not having referrals to home care.

^c Secondary analysis of a randomized controlled study, designed post hoc.

^d This is a qualitative study.

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