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Communication of Discharge Instructions: A Rapid Review

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-ohtac-recommendations.

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List of Abbreviations

AMSTAR	Assessment of Multiple Systematic Reviews
GRADE	Grading of Recommendations Assessment, Development, and Evaluation

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 the rapid review was to establish if providing a written discharge plan in addition to oral information improve patient outcomes in patients being discharged from hospital to home.

Clinical Need and Target Population

The target population for this rapid review is patients being discharged from hospital, either an inpatient setting or from the emergency department. Transitions from hospital to home have the potential to be challenging because of the change in primary care provider. In 2013, Health Quality Ontario (HQO) published an evidence-based analysis on "Discharge Planning in Chronic Conditions". (1) This analysis highlights the necessity for discharge planning.

Discharge instruction or the education of patients includes of 5 key steps: 1) assessment of the patient's knowledge about his or her condition; 2) learning ability of the patient; 3) learning styles; 4) cognitive level; and 5) the patient's motivation. (2)

Ontario Context

According to HQO's evidence-based analysis on discharge planning, "[t]here is a process for discharge planning in approximately 80%–90% of hospitals in Ontario. However, this practice is not standardized throughout the province. It is likely more of an organic process with varying elements tailored to suit the needs of the community." (1)

Rapid Review

Research Question

For patients being discharged from hospital to home, does providing a written discharge plan in addition to oral information improve patient outcomes?

Research Methods

Literature Search

Search Strategy

A literature search was performed on November 13, 2013, using Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, and EBM Reviews for studies published from January 1, 2003, to November 13, 2013. (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

- systematic reviews, meta-analyses, health technology assessments
- English-language full-text publications
- published between January 1, 2003, and November 13, 2013
- patients discharged from an acute hospital to home (from either inpatient setting or emergency department)

Exclusion Criteria

- patients discharged from hospital to another facility (e.g. long term care home, complex continuing care, convalescent home, etc.)

Outcomes of Interest

- 30-day readmission
- patient satisfaction
- functional measures (e.g., activities of daily living)[1] .

[1] This outcome was included to comply with the objectives of the QBP Community Home Care and Patient Functionality Committee, although none of the studies included reported functionality as an outcome.

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 Assessment of Multiple Systematic Reviews (AMSTAR) measurement tool was used to assess the methodological quality of systematic reviews. (3)

The quality of the body of evidence for each outcome was examined according to the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Working Group criteria. (4) The overall quality was determined to be high, moderate, low, or very low using a step-wise, structural methodology.

Study design was the first consideration; the starting assumption was that randomized controlled trials (RCTs) are high quality, whereas observational studies are low quality. Five additional factors—risk of bias, inconsistency, indirectness, imprecision, and publication bias—were then taken into account. Limitations in these areas resulted in downgrading the quality of evidence. Finally, 3 main factors that may raise the quality of evidence were considered: the large magnitude of effect, the dose response gradient, and any residual confounding factors. (4) For more detailed information, please refer to the latest series of GRADE articles. (4)

As stated by the GRADE Working Group, the final quality score can be interpreted using the following definitions:

High	High confidence in the effect estimate—the true effect lies close to the estimate of the effect.
Moderate	Moderate confidence in the effect estimate—the true effect is likely to be close to the estimate of the effect, but may be substantially different.
Low	Low confidence in the effect estimate—the true effect may be substantially different from the estimate of the effect.
Very Low	Very low confidence in the effect estimate—the true effect is likely to be substantially different from the estimate of effect.

Results of Rapid Review

The database search yielded 268 citations published between January 1, 2003, and November 13, 2013, (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.

Two systematic reviews met the inclusion criteria. (5;6) The reference lists of the included studies and health technology assessment websites were searched to identify any other citations, but none were found that met the inclusion criteria.

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	1
Large RCT	
Small RCT	
Observational Studies	
Systematic review of non-RCTs with contemporaneous controls	
Non-RCT with non-contemporaneous controls	
Systematic review of RCTs and observational studies	1
Non-RCT with historical controls	
Database, registry, or cross-sectional study	
Case series	
Retrospective review, modelling	
Studies presented at an international conference	
Expert opinion	
Total	**2**

Abbreviation: RCT, randomized controlled trial.

Two systematic reviews met the inclusion criteria for this rapid review. The first was a Cochrane systematic review by Johnson and Sandford (6) that examined the literature comparing written and verbal information on discharge from hospital to just written information on discharge. This systematic review scored highly on the AMSTAR scale, with a score of 10 out of a possible 11. The one limitation of the study was that they did not search grey literature for additional studies. The other systematic review, Isaacman et al (8), examined information on discharge from the emergency department. This review scored 4 out of 11 on the AMSTAR scale. The systematic review did not have duplicate reviewers, nor did they provide details of the studies included in the systematic review (no study design, characteristics of patients included in studies, quality of study, etc.). Despite these substantial limitations, it was the only systematic review identified that looked at patients being discharged from the emergency department.

Discharge from Acute Hospitalization to Home

In their systematic review, Johnson and Sandford (6) conducted an extensive search of the literature with no limitations on the reason for hospitalization, and they found only 2 randomized control trials that met

their inclusion criteria. (8;9) The population in both studies were parents of children. The study by Isaacman et al (8) was actually a study discharging children from the emergency department, not an acute hospital stay. This study will be further described in the next section, below.

Jenkins et al (9) developed a questionnaire for the parents to complete. They found that there was higher patient knowledge in the group that received both written and verbal instructions compared to the group receiving verbal instructions alone. The GRADE quality of evidence for this outcome of knowledge score was low.

Discharge From Emergency Department to Home

With the exception of a brief description of the literature search, Jenkins et al (9) did not provide sufficient detail on the methodology used to select and analyze studies. The primary outcomes of interest are unclear and the narrative format does not comment on the type or quality of the studies used to draw conclusions. Due to the limited information provided, no GRADE quality of evidence was assigned to the outcomes reported.

The study by Isaacman et al (8) reported the number of emergency department (ED) visits within 3 days of discharge and found that the group that received both written and verbal instruction had fewer ED visits than the group that received verbal instructions alone (3.1% versus 10.1%, $P < 0.05$). The GRADE quality of evidence for this outcome of knowledge score was very low.

Limitations

There are several studies on the management of patients with heart failure that compare intensive, comprehensive heart failure management to standard care. The limitation of these studies is that they often include a variety of interventions (care coordination, more intensive education, more patient support, self-management education, etc.) in the treatment arm, so it is difficult to assess which intervention or combination of interventions is having the greatest impact on outcomes. (10-14) As noted by Hansen et al (14), "[n]o study examined the isolated effect of [patient-centered discharge instructions]."

There was only 1 study identified that compared methods of discharge communication in patients being discharged from an acute hospital stay. (9) It is very difficult to make a generalizable statement about methods of discharge communications based on the results of 1 study of parents of children with burn wounds.

Conclusions

Many studies have been published describing comprehensive discharge planning, which includes thorough discharge communication; unfortunately, there is limited evidence on the effect of methods for discharge communication in isolation of other discharge planning interventions. Therefore, it is not possible to make a conclusion regarding the optimal form of communicating the discharge instructions.

Acknowledgements

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Appendices

Appendix 1: Literature Search Strategies

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to October 2013>, EBM Reviews - ACP Journal Club <1991 to October 2013>, EBM Reviews - Database of Abstracts of Reviews of Effects <4th Quarter 2013>, EBM Reviews - Cochrane Central Register of Controlled Trials <October 2013>, EBM Reviews - Cochrane Methodology Register <3rd Quarter 2012>, EBM Reviews - Health Technology Assessment <4th Quarter 2013>, EBM Reviews - NHS Economic Evaluation Database <4th Quarter 2013>, Ovid MEDLINE(R) <1946 to October Week 5 2013>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <November 12, 2013>
Search Strategy:

#	Searches	Results
1	exp Patient Discharge/	19905
2	exp Aftercare/ or exp Convalescence/	10298
3	"Continuity of Patient Care"/ or exp "Recovery of Function"/	49399
4	((patient* adj2 discharge*) or after?care or post medical discharge* or post?discharge* or convalescen*).ti,ab.	37828
5	or/1-4	107305
6	exp Stroke/	89117
7	exp brain ischemia/ or exp intracranial hemorrhages/	132313
8	(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.	199794
9	or/6-8	287112
10	exp Heart Failure/	93122
11	(((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.	135687
12	or/10-11	162171
13	exp Pulmonary Disease, Chronic Obstructive/	26665
14	exp Emphysema/	11098
15	(copd or coad or chronic airflow obstruction* or (chronic adj2 bronchitis) or emphysema).ti,ab.	59959
16	(chronic obstructive adj2 (lung* or pulmonary or airway* or airflow* or respiratory or bronchopulmonary) adj (disease* or disorder*)).ti,ab.	37701
17	or/13-16	84745
18	exp Pneumonia/	78260
19	(pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) adj inflammation*)).ti,ab.	147195
20	or/18-19	174702
21	or/5,9,12,17,20	778857
22	exp Patient Education as Topic/	76739
23	exp Caregivers/ed [Education]	1923
24	exp Patient Care Planning/	53283
25	Pamphlets/	3764
26	((discharge adj2 (information or advice or education or communication)) or ((patient* or carer* or caregiver*) adj2 (information or education or communication)) or ((Written or oral or spoken) adj2 information) or (pamphlet* or booklet* or leaflet*)).ti,ab.	63499
27	or/22-26	179862
28	21 and 27	14700
29	Meta Analysis.pt.	52731
30	Meta-Analysis/ use mesz or exp Technology Assessment, Biomedical/ use mesz	61456
31	(meta analy* or metaanaly* or pooled analysis or (systematic* adj2 review*) or published studies or published literature or medline or embase or data synthesis or data extraction or cochrane).ti,ab.	210621
32	((health technolog* or biomedical technolog*) adj2 assess*).ti,ab.	2732
33	or/29-32	227128
34	28 and 33	434
35	limit 34 to (english language and yr="2003 -Current") [Limit not valid in CDSR,ACP Journal Club,DARE,CCTR,CLCMR; records were retained]	332
36	remove duplicates from 35	268

Appendix 2: Evidence Quality Assessment

Table A1: AMSTAR Scores of Included Systematic Reviews

Author, Year	AMSTAR Score[a]	(1) Provided Study Design	(2) Duplicate Study Selection	(3) Broad Literature Search	(4) Considered Status of Publication	(5) Listed Excluded Studies	(6) Provided Characteristics of Studies	(7) Assessed Scientific Quality	(8) Considered Quality in Report	(9) Methods to Combine Appropriate	(10) Assessed Publication Bias	(11) Stated Conflict of Interest
Samuels-Kalow et al, 2012 (5)	4	Yes (1)	No (0)	Yes (1)	No (0)	No (0)	No (0)	No (0)	No (0)	Yes (1)[b]	No (0)	Yes (1)
Johnson and Sandford, 2005 (6)	9	Yes (1)	Yes (1)	Yes (1)	No (0)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	No (0)	Yes (1)	Yes (1)

Abbreviations: AMSTAR, Assessment of Multiple Systematic Reviews; RCT, randomized controlled trial.
[a]Maximum possible score is 11. Details of AMSTAR score are described in Shea et al. (3)
[b]Although not explicitly stated, the studies included in the analysis would not have been amenable to combining in a meta-analysis.

Table A2: GRADE Evidence Profile for Comparison of Verbal and Written Discharge Instructions Versus Verbal Instructions Alone

Number of Studies (Design)	Risk of Bias[a]	Inconsistency	Indirectness	Imprecision	Publication Bias	Upgrade Considerations	Quality
Outcome A: Knowledge score							
1 (RCT)	Serious limitations (–1)	Serious limitations (–1)[b]	No serious limitations	No serious limitations	Undetected	None	⊕⊕ Low
Outcome B: 3-Day Return to Emergency Department							
1 (RCT)	Serious limitations (–1)	Serious limitations (–1)[b]	No serious limitations	Serious limitations (–1)[c]	Undetected	None	⊕ Very Low

Abbreviations: GRADE, Grading of Recommendations Assessment, Development, and Evaluation; RCT, randomized controlled trial.
[a]See Table A3 for risk of bias details.
[b]Only 1 study—inconsistency can't be assessed.
[c]No variance or confidence intervals provided.

Table A3: Risk of Bias Among Randomized Controlled Trials for the Comparison of Verbal and Written Discharge Instructions Versus Verbal Instructions Alone

Author, Year	Allocation Concealment	Blinding	Complete Accounting of Patients and Outcome Events	Selective Reporting Bias	Other Limitations
Jenkins et al, 1996 (9)	No limitations	Limitations[a]	Limitations[b]	No limitations	Limitations[c]
Isaacman et al, 1992 (8)	Limitations[d]	Limitations[a]	Limitations[b]	No limitations	No limitations

[a]It was not possible to blind patients since the intervention studied was the effectiveness of providing written materials.
[b]No intent to treat follow-up.
[c]No validation of the questionnaire provided. In addition, it was unclear what the primary outcomes were and whether the study was powered to detect a significant difference between the groups.
[d]No allocation concealment—placement in treatment or control group was based on the day of the month the patient presented to the emergency department.

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