



Complete Summary

TITLE

Congestive heart failure (CHF): percentage of CHF patients prescribed angiotensin-converting enzyme (ACE) inhibitor at hospital discharge.

SOURCE(S)

Canadian Cardiovascular Outcomes Research Team (CCORT). CCORT/CCS CHF quality indicators. [internet]. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2003 [cited 2004 Mar 31]. [various].

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

Brief Abstract

DESCRIPTION

This measure assesses the percentage of eligible congestive heart failure (CHF) patients prescribed angiotensin-converting enzyme (ACE) inhibitor at hospital discharge.

RATIONALE

Cardiovascular disease continues to claim the lives of many Canadians and creates enormous disability for those who survive. While considerable progress has been made in developing effective treatment and therapies, significant opportunities remain to improve the quality of cardiac care provided for the benefit of all Canadians.

The combined results of laboratory and clinical research have identified specific clinical strategies that are beneficial for the management of patients with congestive heart failure (CHF). These therapies include beta-blockers and angiotensin-converting enzyme (ACE) inhibitors for treatment of CHF. However, these proven therapies are often being underutilized in routine clinical practice in Ontario and Canada and there is wide inter-hospital variation in their use. Increasing use of these therapies could lead to significant reduction in the mortality rate associated with these conditions.

A set of Canadian quality indicators for CHF care has been developed. These quality indicators will serve as a foundation for future studies evaluating the quality of CHF care in Canada.

PRIMARY CLINICAL COMPONENT

Congestive heart failure; angiotensin-converting enzyme inhibitors

DENOMINATOR DESCRIPTION

Patients with a confirmed congestive heart failure (CHF) with left ventricular systolic dysfunction (LVSD) alive at discharge (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Patients from the denominator prescribed angiotensin-converting enzyme (ACE) inhibitor at hospital discharge

Evidence Supporting the Measure

PRIMARY MEASURE DOMAIN

Process

SECONDARY MEASURE DOMAIN

Not applicable

EVIDENCE SUPPORTING THE MEASURE

A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Use of this measure to improve performance
Wide variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement
Quality of care research

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age 20 to 105 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

At present, approximately 3% of all Canadians aged 35 to 64 years report having heart disease.

EVIDENCE FOR INCIDENCE/PREVALENCE

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

- Cardiovascular disease (CVD) is the leading cause of death in Canada, claiming over 78,000 lives (roughly 36% of all deaths) in Canada each year.
- Many acute myocardial infarction (AMI) patients who survive their index hospitalization go on to develop congestive heart failure. Hospitalized heart failure patients have an even worse prognosis than AMI patients, with a one-year mortality rate of 33% - worse than that of most malignancies.
- CVD also represents enormous disability, with over 30% of those who report they have heart disease being unable to work due to their illness.

EVIDENCE FOR BURDEN OF ILLNESS

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

UTILIZATION

Cardiovascular disease (CVD) accounts for 18% of all hospitalizations among men and women - more than any other health problem.

EVIDENCE FOR UTILIZATION

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

COSTS

The economic burden of cardiovascular disease (CVD) on the health care system is considerable and growing. In 1998, the estimated costs were approximately \$19 billion, comprised of \$6.8 billion in direct costs, plus \$11.6 billion in indirect costs. This figure is expected to increase as the population continues to age.

EVIDENCE FOR COSTS

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Inclusions

Patients with confirmed congestive heart failure (CHF):

- Most responsible diagnosis of heart failure (International Classification of Diseases, Ninth Revision [ICD-9] code 428)
- Meet Framingham criteria of CHF
- Timing of CHF - must have occurred before the patient arrived at hospital

Exclusions

- Not admitted to an acute care hospital
- Age less than 20 or greater than 105 years
- Invalid health card number
- Admitted to surgical service
- Transferred from another acute care facility
- CHF coded as an in-hospital complication
- CHF admission within the past three years

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

- Patients with confirmed congestive heart failure (CHF) who met case definition criteria (see the "Description of Case Finding" field)
- Left ventricular (LV) systolic dysfunction (ejection fraction [EF] less than 40% or LV grade greater than 2/4 or narrative report of moderate or severe dysfunction)
- Alive at discharge

Exclusions

- Moderate or severe aortic stenosis (AS) (3+ or 4+ AS, aortic valve area [AVA] less than 1.0 cm²)
- Bilateral renal artery stenosis (physician documentation)
- Hyperkalemia (peak or last pre-discharge serum K⁺ greater than 5.5 mEq/L)*
- Systolic blood pressure less than 90 mmHg
- Severe renal dysfunction (peak or last pre-discharge serum creatinine greater than 200 micromol/L)*
- Physician documented reason for non-use of angiotensin-converting enzyme inhibitor (ACEI) (e.g., symptomatic hypotension, patient refusal)
- Enrolled in clinical trial testing alternatives to ACEI as first-line heart failure therapy
- Prescribed angiotensin receptor blocker or hydralazine/nitrates at discharge
- Pregnancy
- Allergy or intolerance to ACEI (e.g., angioedema, hives, severe rash)

Note: *Indicates peak or last pre-discharge value as dictated by regional or institutional access to laboratory data. Peak laboratory value is preferred and last pre-discharge value is acceptable.

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Patients from the denominator prescribed angiotensin-converting enzyme (ACE) inhibitor at hospital discharge

Exclusions

Unspecified

DENOMINATOR TIME WINDOW

Time window precedes index event

NUMERATOR TIME WINDOW

Encounter or point in time

DATA SOURCE

Administrative data

Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

External comparison at a point in time

Internal time comparison

Prescriptive standard

PRESCRIPTIVE STANDARD

The benchmark/target level for angiotensin-converting enzyme (ACE) inhibitor prescribed at hospital discharge is greater than or equal to 85%.

EVIDENCE FOR PRESCRIPTIVE STANDARD

Canadian Cardiovascular Outcomes Research Team (CCORT). Quality of cardiac care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) study -- Phase I. Report 1. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2004 Jan. 66 p.

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

ACE inhibitor prescription at discharge.

MEASURE COLLECTION

[CCORT/CCS Quality Indicators](#)

MEASURE SET NAME

[CCORT/CCS Quality Indicators for Congestive Heart Failure \(CHF\)](#)

SUBMITTER

Canadian Cardiovascular Outcomes Research Team

DEVELOPER

Canadian Cardiovascular Outcomes Research Team
Canadian Cardiovascular Society

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2003 Mar

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Canadian Cardiovascular Outcomes Research Team (CCORT). CCORT/CCS CHF quality indicators. [internet]. Toronto (ON): Canadian Cardiovascular Outcomes Research Team (CCORT); 2003 [cited 2004 Mar 31]. [various].

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MEASURE AVAILABILITY

The individual measure, "ACE Inhibitor Prescription at Discharge," is published in "Quality of Cardiac Care in Ontario. EFFECT (Enhanced Feedback for Effective Cardiac Treatment) Study -- Phase I, Report 1." This document is available from the [Canadian Cardiovascular Outcomes Research Team \(CCORT\)](#).

For more information, contact CCORT at, G1 06 2075 Bayview Avenue, Toronto, Ontario M4N 3M5; Phone: (416) 480-4055 x3874; Fax: (416) 480-6048; Web site: www.ccort.ca.

COMPANION DOCUMENTS

The following is available:

- Lee DS, Tran C, Flintoft V, Grant FC, Liu PP, Tu JV. CCORT/CCS quality indicators for congestive heart failure care. Can J Cardiol 2003 Mar 31; 19(4): 357-64.

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NQMC STATUS

This NQMC summary was completed by ECRI on July 1, 2004. The information was verified by the measure developer on July 26, 2004.

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