Chronic Disease Management of Congestive Heart Failure via Telehealth

Paul Nyhof
Director Provincial Health Contact Centre

Summary of Initiative

- Two-year Project (One Year Intervention One Year Follow-up)
- Nursing Telephone Support to Patients with Congestive Heart Failure – Provided in Combination with Family Physician and Other Involved Health Care Providers
- Administered by Manitoba's Provincial Health Contact Centre, Operators of Health Links – Info Santé
- Carried out in Rural and Urban Environments
- Overlay a Rigorous Research Design for Evaluation Purposes

Acknowledgements

Western Canadian Multi-Jurisdictional Collaborative for Health Lines (PHCTF) for Operational Funding

Canadian Institute for Health Research – Partnership for Health System Improvement For Research Funding

Rationale for Initiative

- Chronic Disease in General, and CHF in Particular Present Major Burdens on Health System.
- CDM is a Regional/Provincial Priority
- Opportunity to Demonstrate the use of Telehealth in Supporting Primary Care Providers, Improving Quality of Care and Outcomes for Patients with CHF

Rationale for Prioritizing CHF

- In Winnipeg Health Region, Heart Failure Consistently 2nd and 3rd Highest CMG in Terms of Volumes of Patients and Total Conservable Beds
- In 2003/04 for all WRHA Sites, the ALOS for Heart Failure was 13.2 and the ELOS (Based on National Averages) was 6.9
- The ALOS for CHF for Two of Winnipeg's Community Hospitals Compared with Peer Hospitals was 17.2 and 15.6 Compared with 9.5
- Readmission Rates High

Health Links – Info Santé









State-of-the-Art Health Customer Contact Centre

- 35 Seat Real-Time Centre with Additional Capacity
- Advanced Telephony System to Track, Manage and Route Inbound and Outbound Calls
- Advanced Clinical Decision Support System
 - Protocol based, paperless
 - Customizable to Manitoba Environment
 - CDM Module

Goals and Objectives of the Project

- Demonstrate Effective Coordination and Integration of Health Care Providers to Manage CHF via Telehealth
- Demonstrate Decreased Health Care Usage (ER utilization, Days of Stay, Re-admission Rates)
- Demonstrate Improved Health Outcomes/Patient Satisfaction
- Demonstrate Patient Acceptance of Telehealth as Means of Access
- To Carry-out an Effective Collaborative Evaluation of the Initiative.

Disease Management Association of America Comprehensive Process

- 1. Population Identification Processes
- 2. Evidence-based Practice Guidelines
- 3. A Collaborative Practice Model that Include Physician and Support Service providers
- 4. Patient Self-management Education (May Include Primary Prevention, Behavior Modification Programs, and Compliance Surveillance)
- Process and Outcomes Measurement, Evaluation and Management
- 6. Routine Reporting/Feedback Loop Including Communication with Patient, Physician, Ancillary Providers and Practice Profiling

CHF Management Process

CareEnhance® Call Center Disease Management Call Flow Diagram

Population Identification

Sources: Physician referral, triage call, health plan, hospital discharge data. DMAA Component: 1

Introduction Letters (Patient/Provider)

CECC Functionality: Reporting Description: Provides introduction to program, describes next steps and offers opt-out. Letters are customizable.

DMAA Component: 3 and 4

Initial Nurse Contact with Patient

CECC Functionality: Outbound Call Queue Description: User enters date for first encounter, outbound call will appear in queue for user/date specified.

1

Unable to Contact Letter

CECC Functionality: Reporting Description: Generated if unable to contact patient.

Assessment Call

CECC Functionality: Guidelines, Survey, Clinical Profile, Health Education, Campaigns Description: Assessment follows these steps:

- Review/update clinical profile
- Introduce program using script in guidelines
- 3. Survey assessment
- Clinical indicators
 Health education
- (if appropriate)
- 6. Review call schedule
- 7. Goal setting with patient8. Service notes/documentation

DMAA Component: 2 and 4

Stratification

CECC Functionality:
Campaigns
Description: Post-assessment,
identify level of severity
(low, moderate, high) to
place patient in appropriate
campaign. Customizable.
DMAA Component: 2

Re-evaluation and Re-stratification

Description: Patients are reevaluated and re-stratified every 6 months using the Assessment process in Step 4. DMAA Component: 5

Reporting/Feedback

CECC Functionality: Reporting Description: Assess and track patient progress using Clinical Alerts, standard triage reports, and financial reconciliation. DMAA Component: 3, 5 and 6

Monitoring Calls

CECC Functionality:
Guidelines, Survey, Clinical
Profile, Health Education,
Campaigns.
Description: Monitoring survey
used to assess condition; focus
is on health education and clinical indicators. Number/frequency of calls can be customized.
DMAA Component: 4 and 5

Health Education

CECC Functionality: Health Education, Outbound Messaging, Literature and Inventory Management, Reporting.
Description: Generate e-mails, faxes and direct mail to patient based on the initial assessment and stratification level.
DMAA Component: 4

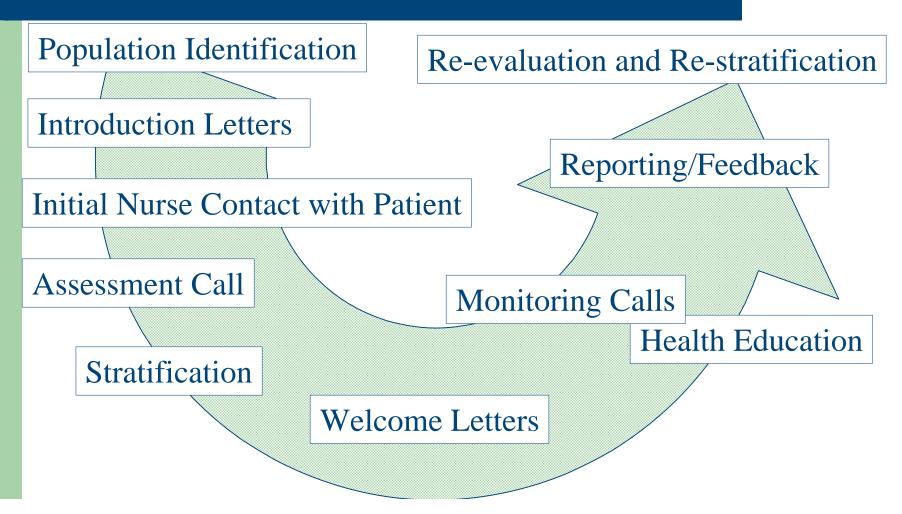
Welcome Letters (Patient/Provider)

CECC Functionality: Reporting Description: Welcomes patient and provider to program, outlines action plan, and provides baseline information and feedback to provider. Customizable. DMAA Component: 3, 4, and 6

MSKESSON

Empowering Healthcare

CHF Management Call Flow



Key Program Features

- Risk Stratification
 - Health Care Utilization
 - Relevant Co-Morbidities
 - Medication Usage
 - Heart Failure Functional Assessment
 - Psychosocial Status
 - Self-Care Management and Health Maintenance Practices
- Stratification Determines Intervention

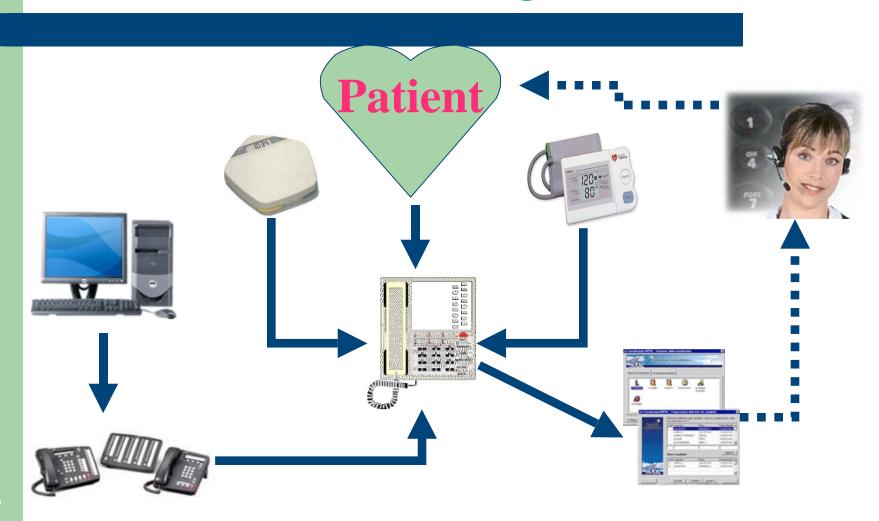
Key Program Features

- Intervention Customized Self-Management Plan
 - Proactive Condition Related Education, Discussion and Support
 - Educational Mailings (Action Plan, Pamphlets, Workbooks)
 - Alert Physicians/Case Manager Based on Clinical Monitoring
 - Referral to Local Support Sources
 - Symptom Based Triage 24/7

Client Health Education Topics

- Heart Failure Basics
- Heart Failure Diet
- Home Monitoring
- Medications
- Preventative Medicine

Home Telemonitoring



Telemonitoring Schedule

- Monday and Friday Surveys
 - Weight
 - Blood Pressure
- Wednesday Survey
 - Biological Measurements
 - Symptom Assessment
 - Breathing/Cough
 - Swelling
 - Fatigue
 - Chest pain or discomfort
- Monthly Survey
 - Medication concerns and compliance
 - Diet and Fluid Intake
 - Geriatric Depression Scale

Eligibility Criteria

- Adults Over Age 40
- NYHC Class II, III, and IV Exclude Class I
- Functionally Able to Handle Home Telemonitoring and Telephone Triage
 - No Significant Visual Impairment
 - No Significant Cognitive Impairment
 - No Significant Physical Impairments
 - No Rotary Dial Telephones
 - Must Speak English

Research and Evaluation Design

- Utilization-Focused Evaluation
 - Ensure Results are "Owned" by RHA
 - Increased Likelihood of Sustainability.
- Collaborative Evaluation
 - Coordinated by RHA
 - Led by Team of Researchers From the Faculty of Medicine,
 Nursing, and the Manitoba Centre for Health Policy and Key
 Stakeholders (RHA and MB Health)
- Recipient CIHR "Partnerships in Health System Improvement" Competition

Research and Evaluation

- Randomized Controlled Trial
 - Generalizability of Results
 - Potential to Transfer to Other Diseases and Jurisdictions
- Patients randomized into three groups
 - Standard Care (No Intervention)
 - Telehealth Nurse
 - Telehealth Nurse With In-Home Monitoring (BP/Weight/Self-Management)
- Data Measurement
 - Assessments
 - Monitoring Calls
 - Surveys/Focus Groups
 - Administrative Data (MCHP)

Research Tools Used

- Client Satisfaction Questionnaire (Hargreaves & Attkisson, 1978)
- Minnesota Living with Heart Failure
 Questionaire (Health Status and Q of L)
- The SF-36 Questionnaire (Q of L)
- The Revised Heart Failure Self-Care Behavior Scale (Measure Improvements in Self-Management)

Qualitative Tools

- Process and Implementation Evaluation (Participant Observation).
- Stakeholder Interviews (Years One and Three)
- Focus Groups with Nurses and Physicians to Assess Integration
- Focus Groups with Patients to Assess Perceptions of Health Lines as a Means of Access to Primary Care

Current Status of the Project

- Enrolment Statistics
 - Physicians 14 rural, 43 urban
 - Patients 65 rural, 87 urban
- Early Process Learning
 - Barriers to Patient Enrolment
 - Family Physician Engagement
 - Researcher-Decision Maker Compromise on Evaluation Components

Emerging Results

- 68% of Enrolled Patients Lost Weight, 22% Maintained,
 7% Gained
- Patients Following Recommended Low Sodium Diet Reported:
 - Decreased Swelling
 - Increased Activity Tolerance
 - Reported Feeling Much Better
- Assessment and Monitoring Calls Identified Individuals in Early CHF, Facilitated Physician Intervention and Avoided Unnecessary ER Visit or Hospital Admission

Emerging Results

- 25% Decreased/45% Maintained NYHA Functional Level
- 20% Reduced Stratification Risk Level
- Improved Medication Compliance, Resulting in Improved Health Status and Decreased Hospital and ER Visits
- Many Patients Adopting Improved Self-Management Techniques Enabling Health Monitoring and Improved Symptom Response
- Patients With Co-Morbid Conditions Report Benefit With Diabetes Management, Blood Sugar Control, and Cholesterol Levels

The Future

- Complete Trial and Evaluation
- Focus on Sustainability Funding
- Integrate New Disease States
 - Diabetes
 - Asthma
- Investigating Aboriginal Focus
 - Cultural Sensitivity

Discussion

Paul Nyhof
Director Provincial Health Contact Centre

Pnyhof@miseri.winnipeg.mb.ca

(204) 788-8016