Program Evaluation:  
RCH Heart Function Clinic  
February 2, 2011 - May 1, 2012

Charline Hooper, Margaret Meloche, Rita Sobolyeva
Evaluation Planning Team

- Charline Hooper, Nurse Practitioner, RCH Cardiac Clinic
- Margaret Meloche, Clinical Manager, Ambulatory Cardiac Clinics
- Rita Sobolyeva, Data Analyst, Cardiac Services
Project Profile

The Royal Columbian Hospital Heart Function Clinic

- **Background**
  - Over 90,000 patients in BC have HF, 40% in FH
  - Annual cost to the health care system - $590M

- **Goals**
  - Improved client wellness
  - Reduction in health care costs
  - Integration and availability of resources to the primary care providers in the community
The Royal Columbian Hospital
Heart Function Clinic

- Target Population
  - FH residents with HF
  - Over 300 referrals from physicians and NPs

- Clinic Processes
  - Collaborative, multidisciplinary team
  - Components:
    clinic visits, group education, follow-up appointments, telephone consults, emergency avoidance visits (EAV)
Definition Chronic Heart Failure

- According to the Canadian Cardiovascular Society (2012), the diagnosis of heart failure is dependent on the client’s physical signs and symptoms of cardiopulmonary congestion and reduced tissue perfusion in the context of systolic and/or diastolic cardiac dysfunction.

- The cardinal triad of heart failure symptoms include dyspnea, fatigue and edema.
Diagnosis Heart Failure

- History and physical examination to confirm or exclude heart failure and contributing comorbidities
- Echocardiography; Assess systolic and diastolic function, cardiac anatomy, valvular disease
- Nuclear testing: L V Gated Study / MUGA Scan
- Exercise stress test / Persantine MI BI
- Heart catheterization, coronary angiography
Heart Failure Management

- The heart failure strategy includes the support and development of a collaborative model in heart failure self-management.
- The HFC provides ongoing heart failure and client wellness assessment.
- Client and family heart failure education.
- Lifestyle management with regular exercise, low sodium diet, fluid restriction and daily dry weight.
- Medications.
RCH Heart Function Clinic
Number of HF-related ED visits to FH ERs

ARH | BGH | CGH | ERH | LMH | PAH | RCH | RMH | SMH
---|---|---|---|---|---|---|---|---
558 | 506 | 385 | 482 | 529 | 373 | 657 | 309 | 1020
Project Profile (cont’d)

The Royal Columbian Hospital Heart Function Clinic

- Program Evaluation
  - Mixed methodology:
    - Client Wellness Questionnaire
    - Chart review
    - Linking HF clinic records to RCH ED data
  - Measures include:
    - New York Heart Association (NYHA) class scale
    - Client questionnaire
Program Model: RCH Heart Function Clinic

**Program Delivery Structure**
- **Operational Activities**
  - Regional Hub center
  - Teaching/Mentorship
  - Client assessment/treatment
  - Education/Counseling
  - Client-focused
  - Database tracking system

- **Program Delivery Resources**
  - HFC Staff
  - Funding
  - Facilities/Supplies
  - Organizational Support
  - Leadership/Partnership

**Program Outcomes**
- **Staff-focused**
  - Contribute to the development of guidelines for HF care
  - Provide teaching about HF to staff across the region
  - Participate with the work of stakeholders at the Ministry of Health, Cardiac Services BC, and Health Authorities

- **Client-focused**
  - Increased wellness through self-management of HF pts
  - Clients demonstrate self-management with HF
  - Clients perception of improved wellness and quality of life
  - Improvement in clients’ clinical measurements

**Program Development Foundation**
- **Strategic Delivery Methods**
  - Provincial collaborative model for HF/Standardized interventional clinic visits/
  - Evidence-based standardized education materials/Standardized client tools & evidence-based guidelines

**Program Delivery Resources**

- **Financial**
  - Reduced HF admissions
  - Reduction in ER visits
  - Reduction in hospital admissions
## Elements of Program Model: Program Delivery Structure

### RCH Heart Function Clinic - Operational Activities

<table>
<thead>
<tr>
<th>Staff-focused</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Relationship as a Hub centre</strong></td>
</tr>
<tr>
<td>- Orients new staff members for all cardiac clinics at hub and spoke sites</td>
</tr>
<tr>
<td>- Shares educational resources with hub and spoke sites</td>
</tr>
<tr>
<td>- Staff members represent heart function clinics at workshops, education sessions and at working forums to ensure best practices and consistent content</td>
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<tr>
<td>- Develops and shares best practices guidelines for the care of clients with HF</td>
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<tr>
<td>- Connects with stakeholders at the Ministry of Health, Cardiac Services BC, Health Authorities, Fraser Health programs such as Medicine, Emergency, Home Health, Palliative Care</td>
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<tr>
<td>- Maintains connections with Canadian Council of Cardiovascular Nurses</td>
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</table>

<table>
<thead>
<tr>
<th>Teaching/Mentorship</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Teaches new staff members for all cardiac clinics at hub and spoke sites</td>
</tr>
<tr>
<td>- Teaches best practices guidelines for the care of clients with heart failure</td>
</tr>
</tbody>
</table>
Elements of Program Model: Program Delivery Structure

RCH Heart Function Clinic - Operational Activities

**Client-focused**

Client care – Assessment and Treatment through different visit types
- Triage phone calls
- Consult visit
- Follow-up appointment via telephone or clinic visit
- Emergency avoidance consultation via telephone or in clinic
- Order and review test results to evaluate and monitor client’s disease progress
- Review charts, documentation, order tests

**Education/Counseling**
- Introduction education classes – 1 hour for new clients/family
- One on one education with health care team members and client/family
- Teaching materials reflecting best practices and care are used consistently and shared with clients/families
- Counseling with clients regarding particular issues related to self-management
Elements of Program Model: Program Delivery Structure

RCH Heart Function Clinic - Program Delivery Resources (Inputs)

**HF Clinic Staff**
- 1 receptionist/clerk
- 1 Nurse Clinician
- 1 Nurse Practitioner
- 0.5 Dietician
- 0.7 Pharmacist
- 6 Cardiologists
- Transcription Services
- Health records
- Diagnostic cardiology

**Annual Funding**
- Labor budget $370,000
- Equipment & Supplies budget $18,000
  - Total $388,000

**Facilities/Supplies/Equipment**
- Facility: clinic with reception, waiting area, 4 exam rooms, consultation room, and workroom for staff
- Supplies: clinical supplies for assessment, office supplies, patient education materials
- Equipment: vital sign mentoring, Doppler, BP cuffs and manometers, computer hardware and software
Elements of Program Model: Program Delivery Structure

RCH Heart Function Clinic - Program Delivery Resources (Inputs) - cont’d

Organizational Support

- Program clerk, Human Resources, Workplace Health, Facilities Management, Housekeeping, Information Management, FH Intranet site for resources, Financial Services, Quality Management

Leadership/Partnership

- Physician leaders supporting the clinic: Dr. Simkus, Dr. Kornder, Dr. Dong, Dr. Blackwell, Dr. Rupka
- FHA leaders: Cathie Heritage, Minnie Downey, Margaret Meloche, Carol Galte, Jason Cook
- Partnerships: Cardiac Services BC, Ministry of Health, Royal Columbian Hosp

Database Tracking System:

- Provincial Heart Failure Database to collect client data across BC to ensure best practices, data analysis and information sharing
RCH Heart Function Clinic: Outcome Indicators

The focus of this project is evaluation of client-focused outcomes only

Outcome Indicators

- Clinical Outcomes:
  - Clients demonstrate self-management with HF
  - Clients’ perception of improved wellness
  - Improvement in clients’ clinical measurements

- Financial Outcomes:
  - Reduction in ER visits
  - Reduction in hospital admissions
RCH Heart Function Clinic

Relationship between Operational Activities and Evaluation Outcomes

Activities
Client Assessment/Treatment

Evaluation: Clinical Outcomes
Demonstrated self-management with HF
Perception of improved wellness
Improvements in clinical measurements

Activities
Education/Counseling

Evaluation: Financial Outcomes
Reduction in ER visits
Reduction in hospital admissions

RCH Heart Function Clinic Goals
Increased wellness through self-management of HF patients
Reduction in HF admissions
# RCH Heart Function Clinic: Logic Model

<table>
<thead>
<tr>
<th>Inputs (Resources)</th>
<th>Activities</th>
<th>Outputs of activities</th>
<th>Program Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF Clinic Staff</td>
<td><strong>Staff-focused</strong></td>
<td><strong>Staff-focused</strong></td>
<td><strong>Staff-focused</strong></td>
</tr>
<tr>
<td>Annual Budget</td>
<td>• Orientation of new staff</td>
<td>• Staff educated</td>
<td>• Staff can teach-back</td>
</tr>
<tr>
<td>Facilities</td>
<td>• Sharing educational resources</td>
<td>• Best practice guidelines</td>
<td>best practices knowledge</td>
</tr>
<tr>
<td>Supplies</td>
<td>• Developing &amp; sharing</td>
<td>• Developed &amp; implemented</td>
<td>• Staff has educational</td>
</tr>
<tr>
<td>Equipment</td>
<td>• Best practices guidelines</td>
<td>• Resources shared with stakeholders</td>
<td>resources</td>
</tr>
<tr>
<td>Organizational</td>
<td>• Connecting with stakeholders</td>
<td>• Attendance at meetings</td>
<td>• Attendance at meetings</td>
</tr>
<tr>
<td>support</td>
<td></td>
<td>with various stakeholders</td>
<td>with various stakeholders</td>
</tr>
<tr>
<td>Leadership</td>
<td><strong>Client-focused</strong></td>
<td><strong>Client-focused</strong></td>
<td><strong>Clinical</strong></td>
</tr>
<tr>
<td>Partnership</td>
<td>• Triage telephone calls</td>
<td>• Client interviewed &amp; assessed by RN, MD,</td>
<td><strong>Financial</strong></td>
</tr>
<tr>
<td>Information</td>
<td>• Consult visit arranged</td>
<td>pharmacist</td>
<td>• Reduction in HF visits</td>
</tr>
<tr>
<td>Management –</td>
<td>• Diagnostic tests ordered</td>
<td>• Treatment plan implemented</td>
<td>• Reduction in hospital</td>
</tr>
<tr>
<td>Database</td>
<td>• Treatment plan developed</td>
<td>• Client followed-up</td>
<td>admissions</td>
</tr>
<tr>
<td></td>
<td>• Initial, routine, and</td>
<td>• Treatment plan monitored</td>
<td></td>
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<td></td>
<td>emergent follow-up via</td>
<td>&amp; adjusted</td>
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<td></td>
<td>telephone</td>
<td>• Client graduates when</td>
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<tr>
<td></td>
<td>or clinic visit:</td>
<td>outcomes met</td>
<td></td>
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<tr>
<td></td>
<td>• Client referred to education</td>
<td>• Emergency client treatment</td>
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<tr>
<td></td>
<td>• Classes or 1:1 session with</td>
<td>plan developed</td>
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<td></td>
<td>health care team</td>
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<tr>
<td></td>
<td>• Teaching materials</td>
<td></td>
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<td></td>
<td>distributed</td>
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A mixed methodology:

- Client Wellness Questionnaire
- Chart Review
- Data capture from RCH ED database (Health & Business Analytics – Decision Support Services)
RCH Heart Function Clinic
Client Wellness Questionnaire Results

22 client participants

- equal proportion of males & females
- majority over 65 years old
- majority of clients felt the same or better after clinic visits over 3 - 12 months period

Clients comments re: sense of wellness

- “Walk to a Canucks game without stopping”
- “Feeling positive”, “Sense of peace in your mind”
- “To be able to do things that I want to do”
RCH Heart Function Clinic
Chart Review Results
February 2, 2011 – May 1, 2012

Referrals to HF Clinic

- Inactive Clients: 209
- Active Clients: 93

Change in NYHA class

- Same: 122
- Decrease: 37
- Improved: 30
- Triaged not seen: 20
RCH Heart Function Clinic

Interesting Results

- 212 Tele-Management Visits
- 30 Emergency Avoidance Visits (EAV)
- EAV disposition:
  - Rapid Access Clinic - 1
  - ER - 7
  - Direct Hospital Admit - 3
  - Home - 19
RCH Heart Function Clinic
Data capture & analysis

209 active client records linked to the RCH Emergency database:

- 197 ER visits 1 year prior to initial RCH clinic visit
- 73 ER visits since initial clinic visit to May 31, 2012
- 82 hospital admissions 1 year prior clinic visit
- 41 hospital admissions since initial clinic visit to May 31, 2012
RCH Heart Function Clinic

Proposed knowledge transfer plan

- Evaluation/data collection from the provincial CHF database
- Development of the EAV data collection tool
RCH Heart Function Clinic

Closing comments

- Positive productive process
- Data collection & analysis are ongoing
- Further evaluation of clients self-management process will be continued
- EAV data analysis is work in progress
- February 2013; 450 referrals to the RCH Heart Function Clinic