Regional Cardiac Rehabilitation for Northwestern Ontario

Lori Marshall RPh, BScPhm, MHA,CHE
Vice President
Thunder Bay Regional Health Sciences Centre
marshall@tbh.net
TBRHSC Cardiac Rehab History

- TBRHSC participated in the CCN MoHLTC Cardiac Rehabilitation Model Evaluation project in 2001
- Established evidence based program for residents of the city of Thunder Bay
The Program Includes:

- **Inpatient Education:**
  Survival Skills only

- **Outpatient Education:**
  Client and Family

- **Intake Clinic:**
  Physician assessment and risk stratification

- **Exercise program**
  - Six month
  - Twice weekly

- **Counselling Services:**
  - Nutrition Counselling
  - Stress/Anxiety/ Social Counselling
  - Smoking Cessation
  - Vocational Counselling
Thunder Bay Program a Success!

- Program has been very successful
  - Positive patient outcomes as evidenced in CCN pilot project
  - Marked improvement in referral patterns
  - Research clearly supports the benefits of participation in Cardiac Rehab program
  - Plans to relocate program to accommodate waiting lists

A clear benefit for the residents of Thunder Bay
What about the rest of Northwestern Ontario (NWO)?

- The region is considered a “Hot Spot” in relation to prevalence of heart disease by the Heart and Stroke Foundation of Ontario.

- Rate of Heart Disease higher than the Provincial average and high Nationally.

- Northwestern Ontario District Health Council identified inequities in delivery of Cardiac Services in NWO and made specific reference to the benefits of Cardiac Rehabilitation.
Challenges

- Region has the lowest population density in Ontario, but the area is 47% of the land mass of the province
- NWO population - 242,450 with 43% of residents living outside the city of Thunder Bay
- Area spread over two time zones
- Geographic location and disbursement of population presents many challenges when planning, providing and accessing healthcare services
- 12 small hospitals, community health centers and outpost nursing stations
  - Few have stress testing capabilities
  - No Cardiologists
- Region lacks professional resources for program delivery
• Region has a large First Nation population - 13.9%
• Many remote communities that are not accessible by road year-round
• First Nation people have a reduced life expectancy and poorer health status
• CVD accounts for 23% of all deaths in this population

*NWLHIN 2006
Program Development

How can we do this cost effectively?

- **Northwest Health Network**
  Call for partners to explore program development

- **Change Foundation Grant**
  Funding for staff education and program development

- **FedNor Funding**
  Capital funding for purchase of Tandberg Interns

- **Ontario Telemedicine Network**
  Recognized as an established service linking isolated centers throughout the region through use of technology

- **Cardiac Care Network experts**
  Support for evolution of program model to include Telemedicine
Telemedicine Technology
the Tandberg Intern MXP

- A portable and self-contained video unit
  - Small footprint
  - Clear image
  - Highly sensitive microphone
  - Able to zoom in or out
  - Stethoscope option available
  - Transports easily with minimum disconnect and reconnect time
  - As easy to use as a cell phone
Program Model

- TBRHSC to act as the coordinating centre
- TBRHSC provide staff education and support to regional sites
- Intake, education, counselling and exercise classes provided via Telemedicine
- Initial pilot of education portion via Telemedicine successful: TBRHSC was the recipient of the Clinidata: Canadian Society of Telehealth Award 2006
Professional Development

- **Education program delivered**
  - Professional staff from partner sites
  - On-site in Thunder Bay with follow-up physical environment assessment

- **Web site linkage developed**
  - Access to common tools, forms, standards/guidelines, policies, etc.
• Monthly education sessions targeting cardiac patients and their family members offered at the TBRHSC and via telemedicine to the region

• Up to 9 sites have participated simultaneously
Exercise classes run in tandem at all sites utilizing a Custom conference configuration of continuous presence for the host site

• “Hollywood squares” option utilized at the host site
• Warm up and cool down lead by host site staff
• Real time collaboration with the host site staff
  – Regional sites not required to have continuous nursing presence
• Formal evaluation undertaken by Lakehead University
  – Catherine Collinson, RN, MPH (candidate)
  – Dr. Darlene Steven
  – Dr. John Jamieson
Benefits for Program Participants

- Clients remain in home community with support of regional health care staff and family
- Full access to education and counselling services
- Potential for peer interaction
- Ultimate goal of self management of risk factors
- Ability to impact community wellness
Staff Benefits

- Professional development
  - Knowledge continuum
- Potential for staff retention and recruitment
- Support of coordinating site
Where we started ...
First Four Partner Sites

Atikokan - 210 km - population 3,400
Nipigon - 130 km - population 1,752
Manitouwadge - 396 km - population 2,300
Marathon - 299 km - population 4,400
• Evaluation focused on three dimensions
  – Program needs and theory
  – Program process and outcomes
  – Program efficiency
• Evaluation included measures of
  – Access to service
  – Quality of care
  – Health and well-being
  – Effectiveness of the regional coordination model
  – Resource utilization
  – Cost
Evaluation

• Outcome measures evaluating changes in health status indicators
  – FBS, Lipid profiles
  – BMI, waist circumference
  – Psychological scores
  – Fat intake
  – Functional capacity
  – Heart rate response
  – Blood pressure response
  – ECG changes
  – Chest pain
Evaluation

• Measures were compared between 3 groups
  – Group A – Thunder Bay clients who participated in videoconference with the region in both exercise and education
  – Group B – Thunder Bay clients who did not participate in videoconferencing with the region
  – Group C – Regional clients who participated in videoconferencing with Thunder Bay in exercise and education
• Clients in all 3 groups had similar outcomes in all measures with the majority in the direction of improvement
• 93% of regional clients reported satisfaction with the videoconferenced education sessions
• 80-90% of clients in all 3 groups rated the exercise portion of the program as positive
• 99.1% of the regional clients disagreed that it would be more beneficial to attend the exercise portion of the program in Thunder Bay
• Regional presentation Jan 2007
  – All NWO Acute Care Sites
  – Requesting notification of intent to participate in program

• Preparation for Fed Nor submission for capital equipment for expanded sites

• Program was recipient of Minister of Health’s Innovation award in 2007
Addition al Partner Sites

Kenora - 499 km - population 18,000
Dryden - 340 km - population 8,198
Sioux Lookout - 370 km - population 5,100
Terrace Bay - 225 km - population 2,700

Stress Testing Possible
Our Goal

Expansion to 13 sites within the region and …

Commitment from Fort Frances and Rainy River Interest from Red Lake and Geraldton
Development of Culturally Sensitive Programming for First Nation Communities
• Participation in Women’s College Hospital Study
• Evaluation of Stanford Model “Chronic Disease Self Management” program via Telemedicine
  – Supportive adjunct to the CR program
• Master Trainer – Coordinator of Program
  – Working with “Mended Hearts” support group to develop lay program
Challenges

- Acquiring Tandbergs for new partner sites
- Limited financial and human resources at coordinating site
- Limited professional resources at regional partner sites
- Telemedicine Network issues
- Language barriers
- Providing culturally sensitive programming
• 39 year old female
  – Risk factors: family history, past cigarette smoking, dyslipidemia, obesity
  – MI 1999
  – 3 subsequent Angioplasties
  – March 2006: Accessed Cardiac Rehab services in her home community via videoconferencing

“This program has done wonders for me physically and mentally. The workouts have given me loads of energy and stamina plus this has been a great stress reliever. The staff is very knowledgeable and caring. I would highly recommend this program.”
Care close to home

Acknowledge:

Gwen Third RN, BScN, MHS, CCN(C)
Manager Cardiology/ Medicine
thirdg@tbh.net

Caterina Kmill RN, CCN (C)
Coordinator Cardiac Education and Rehabilitation
kmillc@tbh.net