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

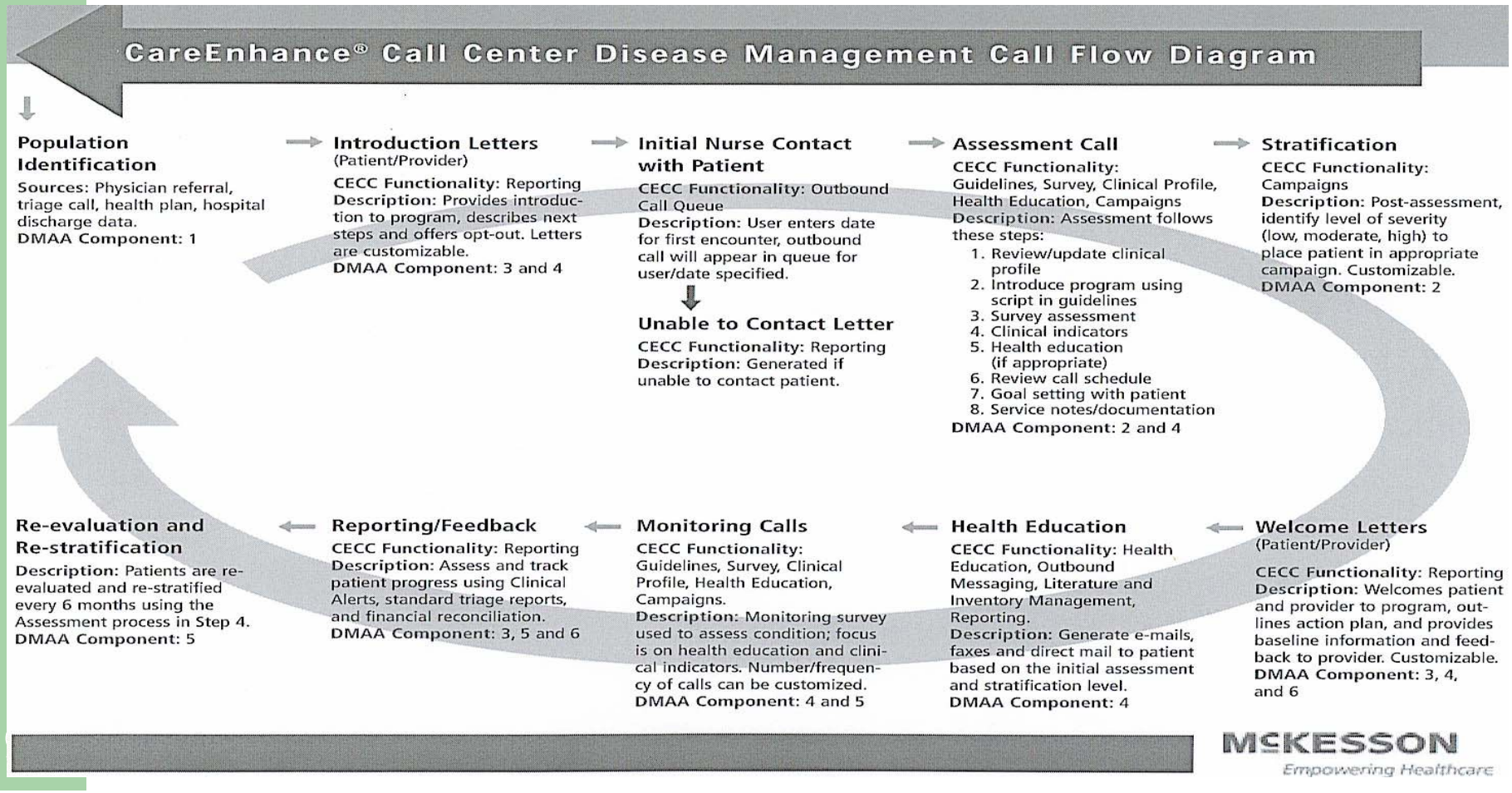
Goals and Objectives of the Project

- 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.

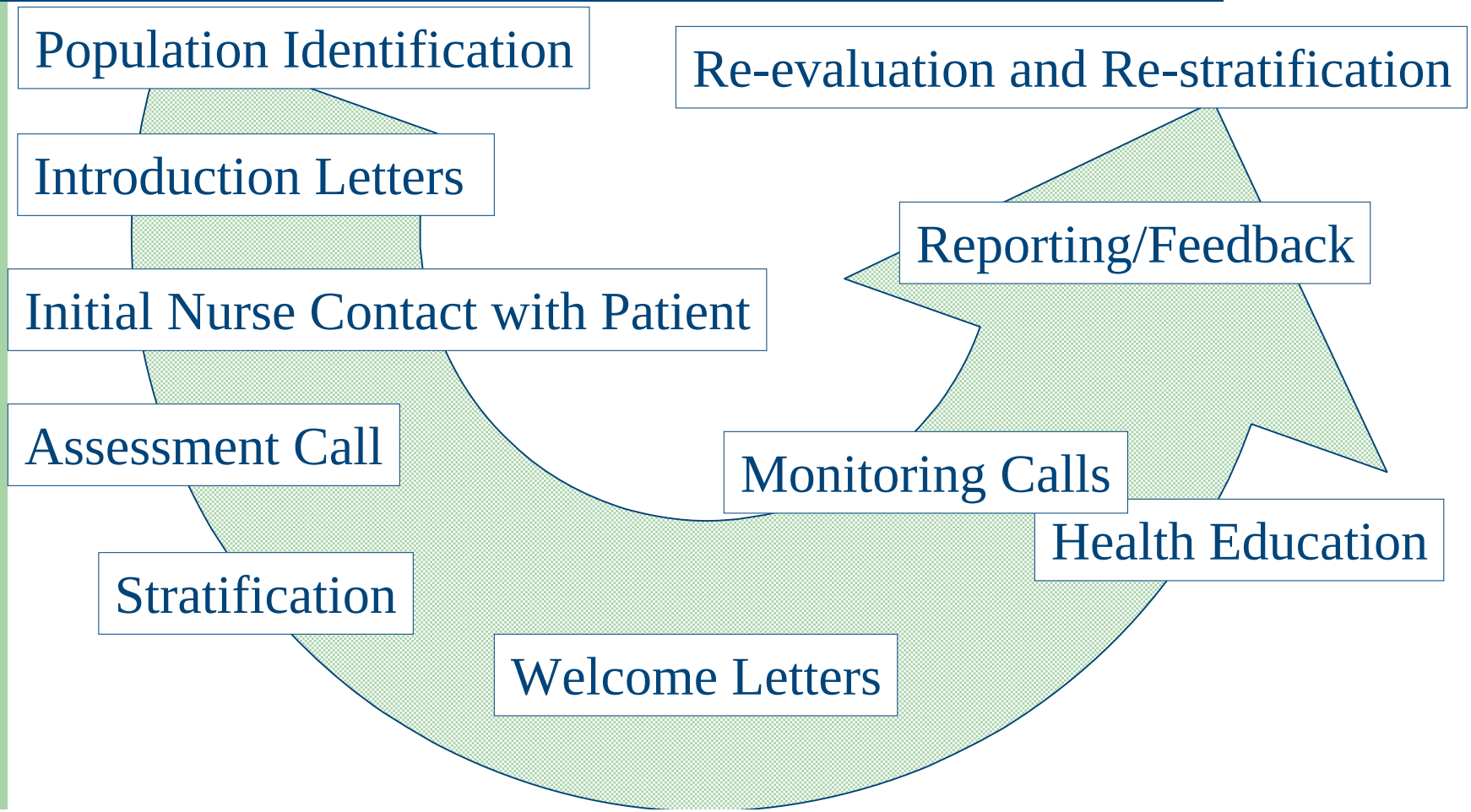
Disease Management Association of America Comprehensive Process

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)
5. 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



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

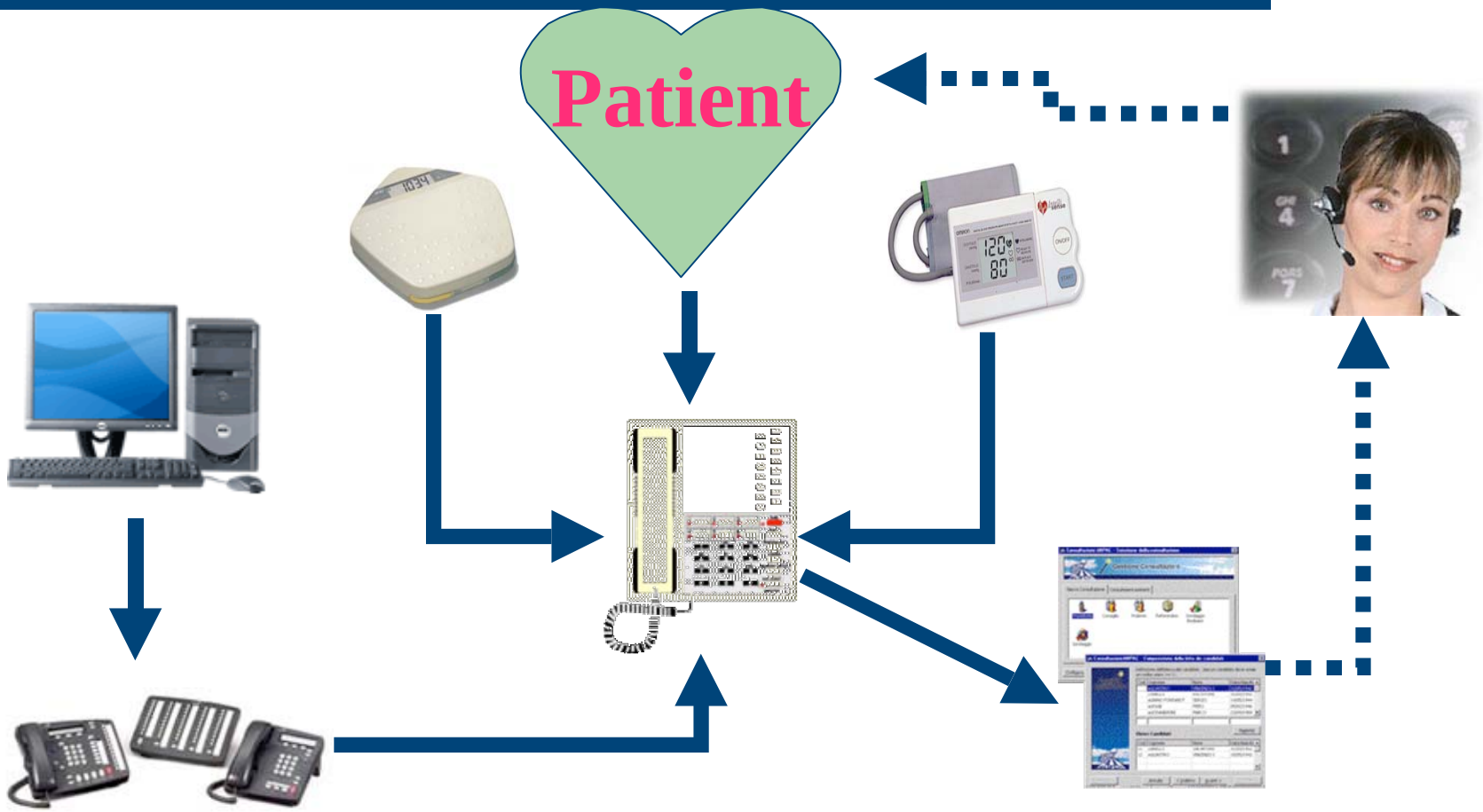
Key Program Features

- 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