Disease management programmes in heart failure (Nurse- and primary care)

T. Jaarsma
Linköpings Universitet
The HF team
The HF team

- Dietician
- GP
- Cardiologist
- Pharmacist
- HF Nurse
- Emerg. Dpt
- Palliative care
- Social worker
- Psychologist
- Home care
- Ph. therapist
‘Traditional’ HF clinic model

FIGURE 1. Traditional heart failure clinic according to Erhardt and Cline.  
Annema et al, 2009
Case management & disease management

Disease management program Heart Failure

Disease management program Diabetes

Disease management program COPD

Annema et al, 2009
‘New’ HF Management?

[Diagram: Proposed heart failure management]

Annema et al, 2009
HF management

- ESC HF Guidelines:

*Heart failure management programmes*

- Heart failure management programmes are recommended for patients with HF recently hospitalized and for other high-risk patients.

*Class of recommendation I, level of evidence A*
Effectiveness of comprehensive disease management improving clinical outcomes in heart failure patients. Rosa Roccaforte a,b,⁎, Catherine Demers a,c, Fulvia Baldassarre d, Koon

Cardiovascular Medicine

Systematic review of multidisciplinary interventions in heart failure

R Holland, J Batterby, I Harvey, E Lenaghan, J Smith, L Hay

A Systematic Meta-Analysis and Heterogeneity of Disease Programs in Congestive Heart Failure

Metaanalysis and review of heart failure disease programs in congestive heart failure

RESEARCH

Telemonitoring or structured telephone support programmes for patients with chronic heart failure: systematic review and meta-analysis

Robyn A Clark, scholar,⁎ Sally C Inglis, scholar,⁎ Finlay A McAlister, associate professor,⁎ John G F Cleland, professor,⁎ Simon Stewart, professor ③

Abstract

Objective To determine whether remote monitoring (structured telephone support or telemonitoring) without regular clinic or home visits improves outcomes for patients with chronic heart failure.

Data sources 15 electronic databases, hand searches of previous studies, and contact with authors and experts.

Data extraction Two investigators independently screened the results.

Review methods Published randomised controlled trials comparing remote monitoring programmes with usual care in patients with chronic heart failure managed within the community.

ABSTRACT

Objective To determine whether remote monitoring (structured telephone support or telemonitoring) without regular clinic or home visits improves outcomes for patients with chronic heart failure. As a result interest is increasing in remote monitoring models for delivering care, which incorporate information communication technology either as telemonitoring (transfer of physiological data such as blood pressure, weight, electrocardiographic details, and oxygen saturation through telephone or digital cable from home to healthcare provider) or as regular structured telephone contacts between patients and healthcare providers, which may or may not include the transfer of physiological data. Earlier reviews of multidisciplinary programmes for most populations access to these programmes is limited as a result of barriers related to funding or geography. As a result interest is increasing in remote monitoring models for delivering care, which incorporate information communication technology either as telemonitoring (transfer of physiological data such as blood pressure, weight, electrocardiographic details, and oxygen saturation through telephone or digital cable from home to healthcare provider) or as regular structured telephone contacts between patients and healthcare providers, which may or may not include the transfer of physiological data. Earlier reviews of multidisciplinary programmes for
COACH Primary and Secondary outcomes

**HF readmission + death**
- Basic vs control
- Intensive vs control

**All cause mortality**
- Basic vs control
- Intensive vs control

**HF readmission**
- Basic vs control
- Intensive vs control

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Basic vs Control</th>
<th>Intensive vs Control</th>
<th>P-value</th>
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<tbody>
<tr>
<td>HF readmission + death</td>
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<td></td>
<td>P=0.73</td>
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<tr>
<td>All cause mortality</td>
<td></td>
<td></td>
<td>P=0.39</td>
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<tr>
<td>HF readmission</td>
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<td>P=0.89</td>
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<td>Table 32  Recommended components of heart failure management programmes</td>
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<tr>
<td>- Multidisciplinary approach frequently led by HF nurses in collaboration with physicians and other related services</td>
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<td>- First contact during hospitalization, early follow-up after discharge through clinic and home-based visits, telephone support, and remote monitoring</td>
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<td>- Target high-risk, symptomatic patients</td>
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<td>- Increased access to healthcare (telephone, remote monitoring, and follow-up)</td>
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<td>- Facilitate access during episodes of decompensation</td>
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<td>- Optimized medical management</td>
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<td>- Access to advanced treatment options</td>
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<td>- Adequate patient education with special emphasis on adherence and self-care management</td>
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<td>- Patient involvement in symptom monitoring and flexible diuretic use</td>
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<td>- Psychosocial support to patients and family and/or caregiver</td>
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Estimation by local experts

Jaarsma et al, EJCN 2006
European heart failure clinics

- Several European countries have HF clinics
- HF outpatient clinic seems favorite model
- Multidisciplinary team can be further developed
- Challenging circumstances in several countries
  - Finances
  - Training
  - Legal issues
International exchange

Chronic heart failure: the role of primary care – position paper of the European Forum for Primary Care

Josep Vilaseca MD PhD MBA
Barcelona Research Institute of Health and Social Services Assessment (BRIHSSA), Spain

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Barcelona Research Institute of Health and Social Services Assessment (BRIHSSA), Spain

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European Forum for Primary Care, The Netherlands

Richard Hobbs
Department of Primary Care and General Practice, University of Birmingham, UK

Christiane Muth MD MPH
Institute for General Practice, Goethe University Frankfurt am Main, Germany

Jan Mårtensson
School of Health Science, University of Jönköping, Sweden

Miguel López-Alcázar MD
Family Doctor, Clinical Neurophysiologist, Centro de Salud Universitario 'La Chana' Granada, Spain

Martin Scherer MD
Senior Physician, Department of General Practice, University of Göttingen, Germany
Mortality is particularly high, with 50% mortality, probably representing late presentation. An accurate estimate of prognosis of cases and stages, is available from follow-up trials (Echocardiographic Heart Failure Study).\textsuperscript{4} Five-year survival rate of the patients was 93% compared to 58% of those with LVSD and 58% for those with chronic lung disease or arthritis, with a similar impact to patients reporting depression.

**Importance of CHF in primary care**

The above data suggest that CHF is increasingly frequent and, therefore, needs to be addressed in the community. This means that primary care must play an important role in the management of CHF.

Indeed, in many countries, general practice is the most frequent point of consultation of patients with CHF, and the role of general practitioners (GPs) and nurses is becoming a key element in the management of CHF.
Organisation of primary care

Sweden and Finland
- Different professions work together and are employed by the same employer

Rest of Europe
- GPs most often self-employed, while district nurses are publicly employed

UK
- Specialized GPs

Ackn. J. Martensson
Organisation of primary care

Southern Europe
- Managed by physicians who have a short education in primary care or no such education at all

United States
- Managed by physicians who can be specialists in primary care, family care, internal medicine or paediatrics

Denmark, the Netherlands and the UK
- GPs play the role of a gate-keeper

Ackn. J. Martensson
Heart failure clinics in Swedish primary health care centres
Intensive home based intervention

- Scotland
- Spain
Randomised controlled trial of specialist nurse intervention in heart failure

Lynda Blue, Elanor Lang, John J V McMurray, Andrew P Davie, Theresa A McDonagh, David R Murdoch, Mark C Petrie, Eugene Connolly, John Norrie, Caroline E Round, Ian Ford, Caroline E Morrison
Registered or eligible patients (n=361)

Not randomised (n=196)
- No left ventricular systolic dysfunction 184
- Refused 12

Randomised (n=165)

Received standard intervention ("usual care") as allocated (n=75)
- Did not receive standard intervention as allocated (n=6)*
  - Followed up (n=75)
  - Withdrawn (n=0)
  - Completed trial (n=75)

Received intervention ("specialist nurse") as allocated (n=82)
- Did not receive intervention as allocated (n=2)†
  - Followed up (n=81)
  - Withdrawn (n=1)
  - Completed trial (n=81)‡

* 6 patients died before discharge
† 1 patient died before discharge, and 1 had liver cancer diagnosed, was discharged to a hospice, and died shortly thereafter
‡ 1 patient was discharged to a long-term convalescent home and did not receive nurse intervention

Blue et al., 2001
- Home visits + telephone contacts
- Monitor electrolyte concentrations
- Teach self monitoring and management (especially the early detection and treatment of decompensation),
- Liaise with other health care as required
- Provide psychological support
- Uptitrante ACE-I, adjust diuretics, and digoxin in chronic heart (written protocols)

Blue et al., 2001
Fig 2  Time to first event (death from any cause or hospital admission for heart failure) in usual care and nurse intervention groups
Intensive home based intervention

- Scotland
- Spain
Randomized Clinical Trial of the Effectiveness of a Home-Based Intervention in Patients With Heart Failure: The IC-DOM Study

Carlos Brotons, Carles Falces, José Alegre, Elena Ballarín, Jordi Casanovas, Teresa Cañà, Mireia Martínez, Irene Moral, Jacint Ortiz, Eulàlia Pérez, Elisabet Rayó, Jesús Recio, Eulàlia Roig, and Xavier Vidal

Unidad de Investigación, Equipo de Atención Primaria Sardenya, Barcelona, Spain
- Monthly home visits by nurses
- Telephone contact every 15 days
- Check vital signs + functional status
- Patient education
- Contact GP if needed

Brotons, 2009
Figure 2. Kaplan-Meier Curves showing time to death or hospital readmission in the intervention group and control group.

Brotons, 2009
Prolonged Beneficial Effects of a Home-Based Intervention on Unplanned Readmissions and Mortality Among Patients With Congestive Heart Failure

Simon Stewart, BA, BN; Annette Joy Vandenbroek, BN; Sue Pearson, BA; John David Horowitz, MBBS, PhD
Home based intervention

- a single home visit 1 week after discharge (by a nurse and a pharmacist) to optimize medication management, identify early clinical deterioration,
- and intensify medical follow-up and caregiver vigilance

Stewart, 1999
Figure 1. Cumulative total of unplanned readmissions plus out-of-hospital deaths during 18 months of follow-up (Mann-Whitney test).
Figure 2. Frequency distribution of unplanned readmissions during 18 months of follow-up. HBI indicates home-based intervention; UC, usual care.
COACH-2

Heart Failure clinics versus primary care in the long-term follow-up of patients with Heart Failure
Objectives COACH-2

To determine whether long-term follow-up and treatment in primary care is equally effective as follow up at a specialized HF clinic in terms of guideline adherence and patient compliance in patients with heart failure initially managed and up-titrated to optimal treatment (according to the ESC guidelines) at the heart failure clinic.
Study design

- A multicentre, randomised controlled non-inferiority design

- In each centre, patients will be randomised into one of the two conditions:
  - long-term follow-up in the HF clinic or
  - long-term follow-up in primary care
2 groups

1. HF clinic:
   - Cardiologist and HF nurse
   - Scheduled contacts at 3, 6, 9 and 12

2. GP
   - GP’s receive a standardized follow-up advice:
     - Contacts/visits advised at 3, 6, 9, 12 months
   - Routine visits to the cardiologist or HF nurse are not scheduled
   - Availability for consultation/back referral
Endpoints

- Guideline adherence defined as prescription of HF medication

- Patient compliance

<table>
<thead>
<tr>
<th>NYHA class (See table)</th>
<th>ACE-I/ARB</th>
<th>Beta Blocker</th>
<th>Aldosterone antagonist</th>
<th>GAI-3 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYHA II</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
<td>50 + 50</td>
</tr>
<tr>
<td>NYHA III/IV</td>
<td>Yes</td>
<td>yes</td>
<td>Yes</td>
<td>33.3 + 33.3 + 33.3</td>
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WP3:

European criteria for optimal home based management of heart failure patients.
Phase 1:
- Describe European criteria/components for optimal home based management of heart failure patients.

Phase 2:
- Feasibility studies to test the components in Sweden, Netherlands and Spain.

Phase 3:
- Revise components.
New(er) components

- Remote monitoring
- Group education
- Nurse practitioner clinics
- Internet monitoring
The HF team

- Pharmacist
- Dietician
- Ph. therapist
- Cardiologist
- GP
- HF Nurse
- Palliative care
- Home care
- Social worker
- Psychologist
- Emerg. Dpt