Are we worth it?
Exploring the economic value of specialist nursing in practice

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supported by
Royal College of Nursing and
Office for Public Management

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Project background

Collaborative project between The Royal College of Nursing (RCN) and the Office for Public Management (OPM), funded by the Burdett Trust for Nursing to

- Equip senior nursing staff with the skills to understand and evidence the economic value of services
- To ensure that nursing innovations are 'fit for purpose'
- To support service review / redesign
- First nurses recruited April 2012, training commenced May with submission of economic assessments for verification and publication by Oct 2012

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Project aim

- To monetise data regarding the acute heart failure admissions with differing management
- To explore length of stay associated with differing management
- To monetise the cost of SIGN CHF recommended management for HFNLS patients in the community
- To explore patient symptom assessment within the HFNLS
- To identify potential improvements to maximise quality of both patient care and service delivery across NHS Tayside

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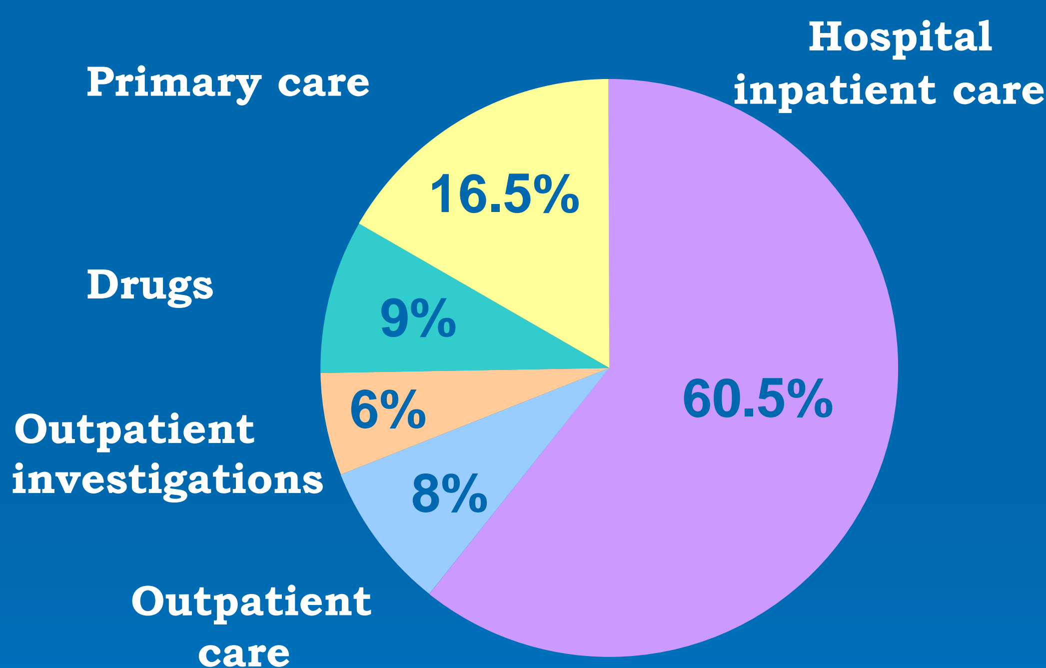
Costs of HF to the UK NHS (2000)



Cost element	£ million
Primary care	103.8
Hospital inpatient care	378.6
Day case care	0.45
Outpatient care	51.25
Outpatient investigations	37.44
Drugs	54.08
Total	625.62

Coronary heart disease statistics: heart failure supplement., BHF 2002, http://www.heartstats.org, accessed 25.02.04.

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Heart failure therapies

B-Blockers
↓ Mortality by 32 %
(cumulative ↓ by 44%)

ACEIs
↓ 12 month
mortality by 17 %

Aldosterone
antagonists
↓ 12 month
mortality by 32%

↓ Mortality by 24%
(cumulative ↓ by 57%)

Mann DL et al. Circulation 2005;111: 2837-2849

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Heart Failure Nurse Liaison Service – ‘Pathway to outcomes’

Input

Direct
- 3x WTE Band 7 Heart Failure Specialist Nurses
- 1x.5 WTE Band 7 Physiotherapist
- 1x.8 WTE Band 3 Administrative support
- NHS Tayside budget
- Office space (within NHS Tayside property)
- Training
- Clinical supplies & equipment
- Office supplies & equipment

Indirect
- Travel costs
- Non-medical prescribing

Activities & outputs

- Home visiting model
- Individual management plan
- Expert symptom & clinical assessment
- Optimise medication management
- Investigations
- Multi-disciplinary team working across all sectors of care
- Patient & Carer education
- Self monitoring
- Rapid response service
- Palliative care
- Patient discharge if stable > 6mths & optimal medication

Groups targeted

For intervention
- Patients with Heart Failure due to Left Ventricular Systolic Dysfunction (LVSD), either post admission or remain symptomatic / complex at out-patient clinic assessment

For partnership
- Patients
- Carers
- Acute cardiology services
- NHS Tayside Heart Failure Working Group
- GP / Practice & District Nursing services
- Allied Health Professionals
- Social Care services

For delivery
- Heart Failure Specialist Nursing Team

Outcomes

Staff outcomes
- Expert knowledge / confidence in heart failure management
- Staff satisfaction due to autonomy of role

Patient outcomes
- Improved symptom control results in improved clinical stability
- Reduced frequency of hospital admissions
- Ongoing support from an expert clinical service
- Patient-centred model of care

Organisational outcomes
- Reduced costs attached to managing this patient group within a general practice setting
- Reduced financial burden associated with an unstable patient group due to reduced bed days and reduced length of stay

‘A’ grade recommendation from SIGN 95 Management of Chronic Heart Failure 2007 identifies :

- Comprehensive discharge planning should ensure links with post-discharge services are in place for all those with symptomatic heart failure. A nurse-led, home based element should be included.

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Methods (1)

- Clinical audit
- Data source
  - NHS Tayside Information Service Division (ISD)
    - Hospital admissions for CHF (primary coding diagnosis of Heart Failure, Left Ventricular Failure, Non Specific HF and Congestive Cardiac Failure)
- To assess the impact of NHS Tayside HFNLS
  - Comparison of 2 cohorts of CHF admissions
    - Pre and post service introduction

      Jan 2003-04 & Jan 2011-12

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Methods (2)

- Measurements
  - Site of admissions
    - To allocate accurate costing for each location
  - Clinical data review via Clinical Portal, SCI & EDD
    - To verify primary diagnosis coding
  - Patient activity
    - Number of Re-admissions
    - Length of stay
  - Quality value
    - NYHA improvement (2011)
    - Patient satisfaction questionnaire (2011 cohort)

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Methods (3)

- Economic costing
  - Cost per admission
    - Type of ward
    - Location
    - Length of stay
    - Inflation adjustment of 2.5% per year to provide actual costing
  - Cost per primary care type of contact (mid costs taken)
  - Annual running cost of HFNLS

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Economic approaches

A number of economic options are available as guided by H.M. Treasury depending on the information available and purpose for study such as:-

- Cost-benefit analysis - inputs & outputs quantified and monetised
- Cost-effectiveness analysis - alternative interventions compared
- Cost-minimisation analysis - different approaches for same outcome
- Cost-consequence analysis - range of benefits from differing activities
- Social return on investment - information not normally given cost value
- Cost-avoidance analysis

ref OPM Handout 1, 2012

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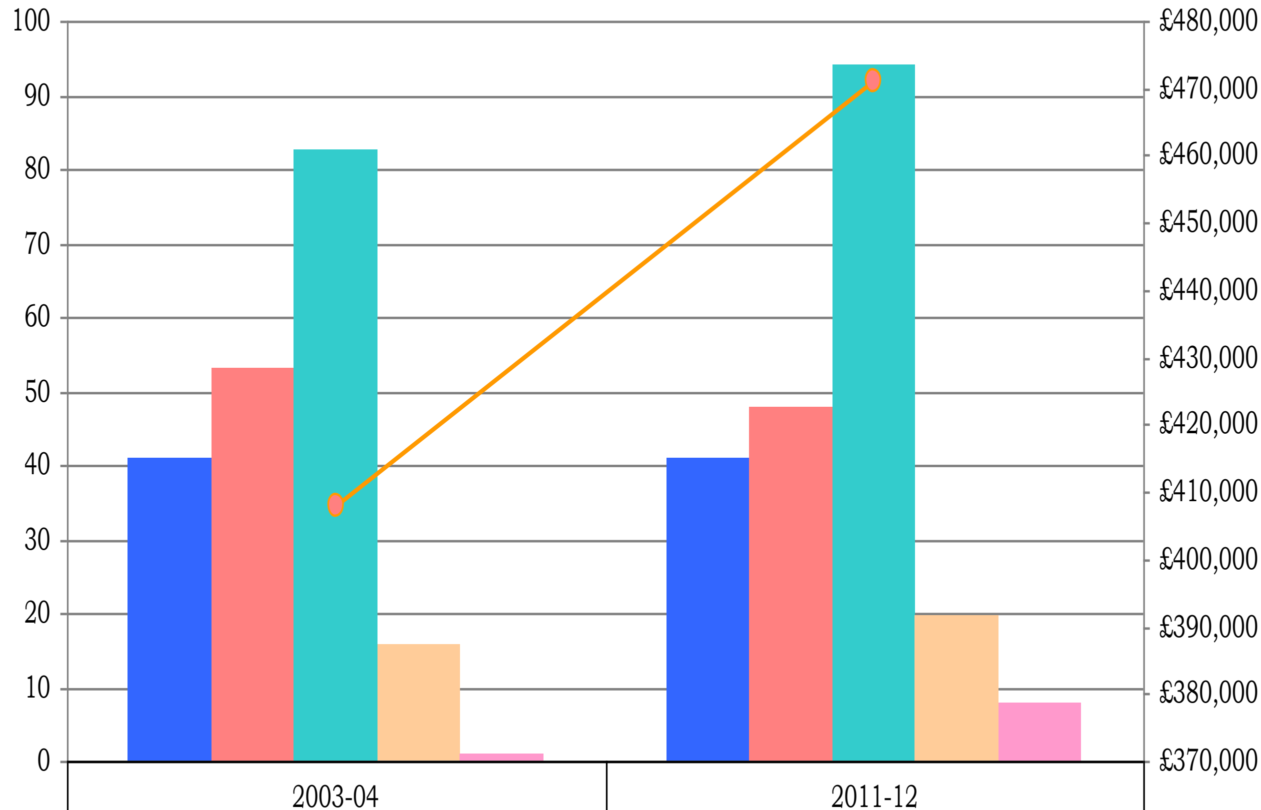
Initial results



	2003-04	2011-12
Total pts re-admit	41	41
Episodes of re-admit	53	48
Total bed days (10s)	82.7	94.1
Av LOS per admit	15.6	19.6
RIP re-admits	1.00	8.00
Cost	£407,848	£471,121

Discussion

- Heart Failure admission costs appear increased however this may be related to increased number of episodes ending in death 2003/04=1 (24 days) v's 2011/12=8 (259 days)
- Slightly less episodes of re-admission but overall length of stay has increased
- Average age in 2003/04 was 75yrs, 2011/12 was 79yrs
- When scrutinised further, data from 2011 / 12 indicates clear differences in activity depending on post discharge management –
    - 132 patients (54%) were referred to the HFNLS
    - 112 patients (46%) were not referred

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Activity non ref v's ref patients

	Not referred	Referred
Total LVSD admits	112	132
Total pts re-admit	30	11
Episodes of re-admit	32	16
Total bed days (10s)	66.4	27.7
Av LOS per admit	22.1	17.3
Cost	£276,528	£194,593

Discussion (2)

Patient location

- Referred group NW n87 / PRI n39 / Comm. Hosp n6
- Non referred group:- NW n49 / PRI n40 / Comm. Hosp n23

Age

- Average age of referred group 78yrs
- Average age of non referred group 80yrs

Co-morbidities

- Difficult to establish without full individual review but from HFNLS records, patients have between 2-13 documented co-morbidities

Palliative Care / End of life – acknowledged this is difficult to predict but should not preclude patients from specialist input

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Avoided admission cost

Comparison between the two groups explores potential efficiencies from re-admission rates

- 8.3% (n11) of referred pt group re-admitted = £194,593
- 26.7% (n30) of non referred pt group re-admitted = £276,528

If HFNLS were not in place, it can be assumed that the referred group would have resembled non-referred patterns, therefore

- 26.7% of 132 patients (n35) assuming each patient had 1.45 admits each @ £9,815 av NHST Cardiac admit £498,111

Indicates approx cost efficiencies **£303,518**

CHP associated costs

- Total face to face contacts 2011/12 — 3493
- Total blood tests during same period — 3731

- 515 patients managed within HFNLS during this period
  - Average 7 visits & 7 bloods tests per pt/per year

The CHP cost for equivalent review process:-

- £10-12 per Practice Nurse apt (£11 av cost used)
- £28-35 per GP review (£31 av cost used) ref RCGP Scotland, 2011. A Manifesto for Scotland

- £294 X 515 patients = avoided costs of **£151,410**

Cost commitment for HFNLS

- HF Specialist Nurse x 3
- 1x .8 Administrative Support
- 1x .5 Physiotherapist
- Supplies - clinical
- Training Budget
- Physical resources eg office furniture
- Service equipment
- Stationery
- Travel costs

- Total **£202,604**

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Room for improvement?

Total HF admission costs from 2011/12 **£471,121**

- 8.3% of HFNLS group re-admit =
  11 pts with 16 episodes (av adm/pt is 1.45) £194,593

- If non-referred group were under HFNLS model assuming 8.3% of 112 pts continue would be 9 pts between 1.06 & 1.45 adm/pt (9.54 /13 episodes) @ NHST HF average admission cost of £9,815

Potential range acute cost £288,228 - £322,188

Indicated cost efficiency range **£93,635 - £148,933**

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Financial Summary

➢ Evidenced efficiencies from avoided admissions	£303,518
➢ HFNLS activity resulting in CHP cost avoidance	£151,410
➢ Subtotal	**£454,928**
➢ Cost of HFNLS	- £202,604
➢ Subtotal	**£252,324**
Average return on investment (ROI) per pt/per year	£489
If estimated £93,635 -148,933 added from improved referral and reduced rates of re-admission	**£345,959- 401,257**
Potential ROI range per pt/per yr	£671 - £779

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Further patient related value

- The New York Heart Association (NYHA) classification tool is internationally recognised for the purpose of clinical assessment
- Total 515 patients in service 2011/12. To gauge trend, two recordings of NYHA Class required for each patient resulting in 430 records providing data illustrating the patient journey within the HFNLS model of care

- Outcomes:-
- 56% report stable symptom control
- 30% report improved symptom control
- 14% report decline in symptom control, of those 8% were end of life

- Given low percentage of decline control, this supports data regarding reduced admit rates from HFNLS

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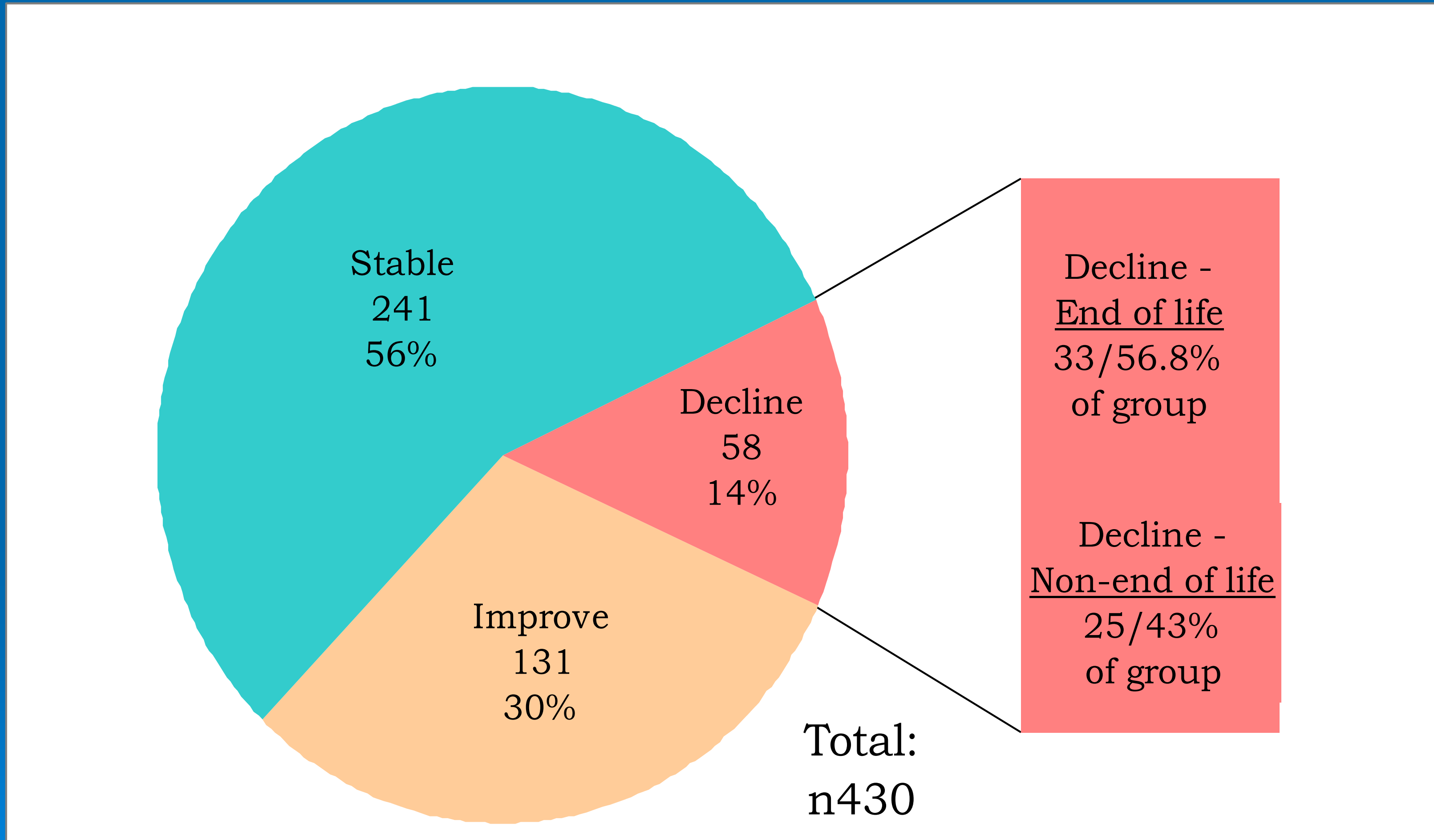
Assessment of patient symptom burden



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Patient Feedback Measure

This year NHS Tayside's Specialist Nurses commissioned patient feedback project regarding service value to patient experience using validated CARE measure tool (University of Glasgow)

- 50 questionnaires per service
- 45 replies to date – 90% response rate
- 100% of patients reporting very good or excellent satisfaction in areas such as listening, understanding concerns, positivity, care and compassion, helping patients to take control and encouraging partnership working.

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Key messages

- Heart Failure services appear to contribute in the avoidance of admissions by improving management and by provision of rapid response facility
- There are clear financial efficiencies for NHS Tayside attached to this improvement from reduced re-admission rates and LOS
- Further benefits can be achieved from improving referral strategies
- Community Health Partnerships benefit from avoided costs as evidenced in this work

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many thanks