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A Stitch in Time Saves Nine

Transition of Care for HF Patients

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Leadership. Knowledge. Community.

Disclosures

- **None relevant**

Overview

- Pitfalls of early discharge
  - Illustrative case
- The discharge journey
- Why Transitional Care? What is it?
- What is the evidence for Transitional Care?
- Hamilton TCP: early data

Burden of Heart Failure (HF)

Heckman et al CJGIM 07; Howlett Can J Cardiol 03; Hall Can J Cardiol 03

- One of most common causes of hospitalization
- Patients over 75 years account for 2/3 of hospital days for HF
- Readmissions are common within 6 months after discharge
  - May lead to functional decline
  - Institutionalization

Pitfalls of early discharge

Naylor J Cardiovasc Nurs 00, Bowles JAGS 02, Wright Eur J Heart Fail 03; Riegel Nurs Res 07

- Earlier discharge of seniors driving rise in rehospitalization
  - 25% of all Medicare admissions in US
- Risk factors
  - multiple functional deficits
  - polypharmacy, 2+ chronic health conditions
  - limited social support system
  - 2+ hospitalizations in last 6 months
- Risk factors also associated with
  - Longer length of stay
  - Poorer knowledge of HF

Illustrative Case

- 86 yo male hospitalized mid-August 2007 with abdominal pain and distension
- Past history:
  - Previous MI, CABG x 2 (1998), LV EF 40% (2006)
  - Type II diabetes, hyperlipidemia, atrial fibrillation
  - Chronic renal failure (baseline creatinine ~115)

Diagnostic work-up

- Right- and left heart failure with ascites
  - 1.5 litres drained, no malignant cells
- LV EF now 25%
- In retrospect, had been getting more dyspneic over past year (had been attributed to “age”)

In Hospital Medications

- Metoprolol 37.5 mg bid
- Ramipril 5 mg od
- Atorvastatin 20 mg
- Digoxin 0.0625 mg od
- Metolazone 2.5 mg od
- Furosemide 120 mg bid
- ECASA 81 mg od
- Repaglinide 0.5 mg
- Slow-K 8 mg tabs bid
- Septra 1 od (SBP prophylaxis)
- Warfarin 2 mg od
- Prevacid 30 mg bid

Course in Hospital

- Diuresed slowly but steadily
- Able to walk up 24 steps, laps around the ward
- Discharged Sept. 3, 2007 with home care, bedside commode, shower bench and walker
  - Discharged on in-hospital medications
  - Instructed to get in touch with family MD “soon”
- Referred to heart function clinic (earliest appointment October 3, 2007)

Heart Function Visit

- Seen by specialist in interim
  - reduces Metolazone to Monday/ Wednesday/ Friday
- Significant decline since discharge
- Wife reports patient had
  - increasing weakness
  - in bed most of the time since discharge
  - anorexic, weight loss of 5-6 kg
  - no chest pain or dyspnea

Clinical Assessment

- Looks tired
  - BP 90/45 sitting, radial pulse barely palpable standing
  - HR 55, atrial fibrillation
  - Heart sounds and chest unremarkable
  - JVP flat, mucous membranes dry, no ascites
- Labs
  - Creatinine 385, urea 61.3, Sodium 131, Cl 90, K 5.1
  - Digoxin 2.6 mmol/L
  - CBC, calcium, albumin, CXR: no acute abnormality

Caregiving Situation

- Frail wife finding it difficult to help him dress
  - not enough time to look after daily household issues
- Live in a side-split, 6 steps up and down
- Patient had
  - memory loss for past 3-5 months
  - recent low mood, passive death wishes
- Couple isolated, daughter 1.5 hours away

Case Resolution

- **Patient re-hospitalized from October 3-13, 2007**
  - cardiac medications adjusted
  - treated for depression
  - MMSE 24/30, abnormal clock
- **At discharge:**
  - enhanced home care personal support
  - family taught about fluid management, how to seek help
  - seen in HF clinic within 2 weeks of discharge, followed since
  - no re-hospitalization after 6 months

How should this discharge have been managed?

A: Peridischarge education for HF patients

Gwadry-Sridhar Arch Intern Med 04; Koelling Circ 05

- **Meta-analysis 8 RCTs**
  - peridischarge multidisciplinary programs for HF
  - mean ages: 64.6 (14.3) to 80.3 (6.8)
  - Readmission rates RR 0.79 (0.68-0.91)
- **RCT**
  - 223 pts with HF, EF < 40%, about 65 years, 58% male
  - 1 hour HF education session vs. “usual discharge”
  - F/U 180 days
  - Rehospitalization / death ARR 0.66 (0.46-0.95)

B: HF management programs

Recommendations

- Health care institutions serving HF patients should provide resources for or access to appropriate disease management care for patients recently discharged from hospital with a primary diagnosis of HF

(Class I, Level C)

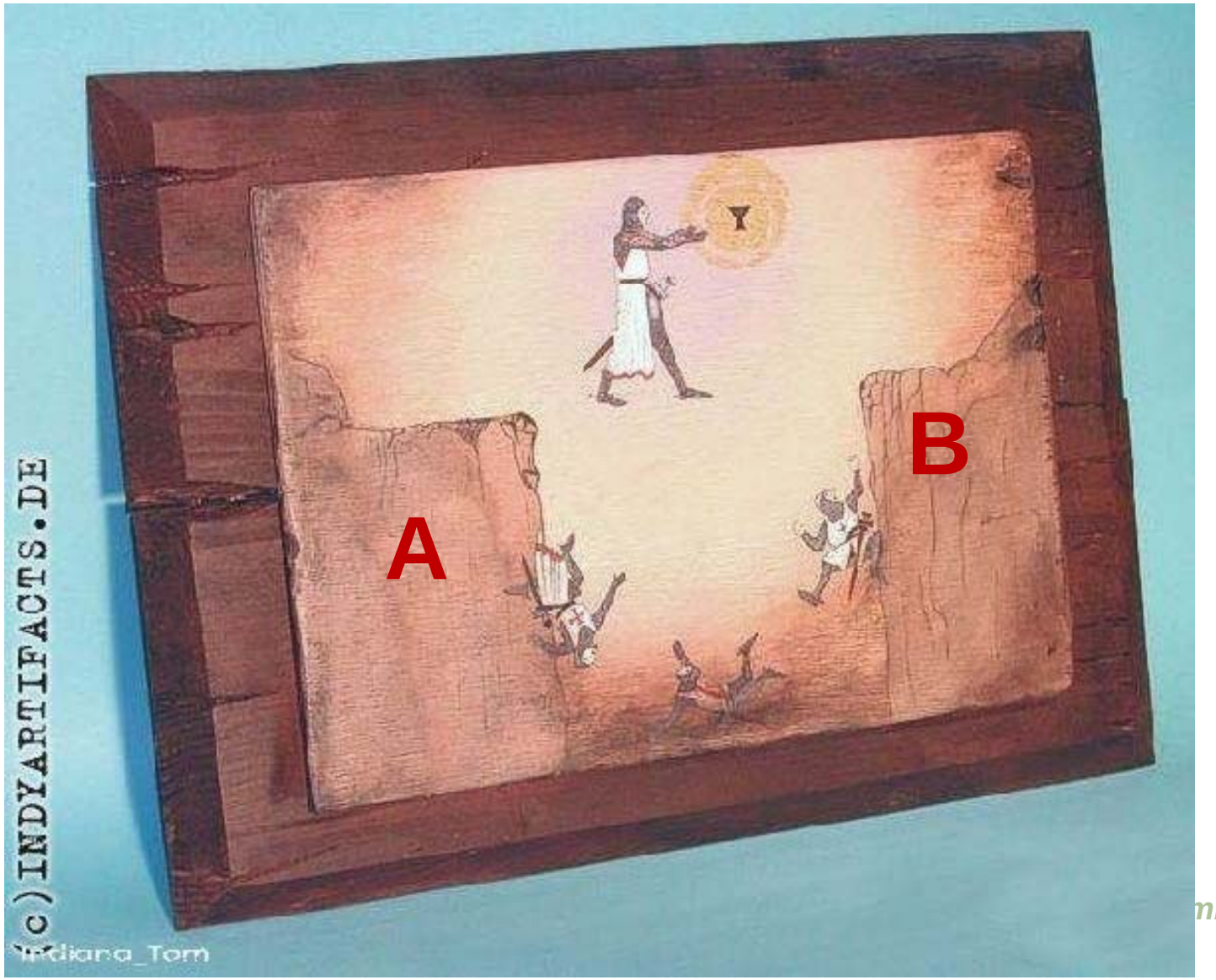
- These have been shown to improve adherence to therapy, reduce readmission/resource use rates and may improve mortality and quality of life

Arnold JMO, Howlett JG, Ducharme A et al. *Can J Cardiol* 2008;24(1):21-40.

Transitional Care

- **A series of processes or actions to**
  - ensure / enhance continuity of care and collaboration between health care professionals
  - facilitate safe and timely transfer of patients from one level of care (e.g., hospital) to another (e.g., primary care physician)
  - Getting from "A" to "B"

Arnold JMO, Howlett JG, Ducharme A et al. *Can J Cardiol* 2008;24(1):21-40.


A
B
(c)INDYARTIFACTS.DE
Indiana_Tom

Components of Self Care

- ***Maintenance***: adherence to treatment and positive health practices

- ***Management***: active process that involves recognizing and responding to symptoms
  - recognize subtle changes in status
  - evaluate their significance
  - take appropriate action
  - evaluate effects of action

Transitional care

Phillips JAMA 04; Gwadry-Sridhar Arch Intern Med 04; Yu Eur Heart J 06

- Target high risk elderly with multidisciplinary interventions
- Key features
  - multidisciplinary: APN, MD, others
  - emphasize medication adherence, exercise
  - prompt interventions when deteriorating
  - multiple f/u methods, including home visits

  - ***Focus on Self-Care Education***

Transitional care in HF patients: RCT

Naylor MD J Am Geriatr Soc 04

- 239 pts, 65 yrs+ (mean 76), 6 active comorbidities
- APN-led Self-Care intervention with primary MD
  - identify pt and *caregiver* goals
  - individualized plan of care addressing comorbidities and social issues
  - daily hospital visits, day after discharge, and up to 7 more in 3 months after
  - follow-up 1 year

Results

- Favouring intervention
  - rehosp / death 47.5% vs. 61.2% p = 0.01
  - rehospitalizations 104 vs. 162 p<0.047
    - including for comorbid illness
  - $4845 less per patient

Care transitions intervention: RCT

Coleman Arch Intern Med 06

- 750 pts, 76 yrs
  - HF, stroke, CAD, arrhythmia, COPD, DM, spinal stenosis, hip fracture, PVD, DVT, PE
  - 15% HF
- 4 pillars of intervention
  - assistance with meds
  - pt-centred record owned by pt (passport)
  - timely f/u to primary or specialty care
  - list of red flags and plans for response

Care transitions intervention: RCT

Coleman Arch Intern Med 06

- Transition coach: APN trained to enhance patient and caregiver self-care
  - hospital visits
  - home visit
    - reconcile medications
    - pt/caregiver communication strategies with MDs
    - review “red flags”, management strategies: 911 plan
  - 3 subsequent phone calls in next 28 days

Results favoured intervention

- all-cause rehospitalization at
  - *30 days 0.59 p=.048*
  - *90 days 0.64 p=.04*
  - 180 days 0.80 p=.28
- index diagnosis rehospitalization
  - 30 days 0.56 p=.18
  - *90 days 0.50 p=.04*
  - *180 days 0.55 p=.46*
- $500 USD/pt saved at 180 days

CCS HF Guidelines 2008

- Patients and caregivers should be educated while in hospital and soon after discharge on signs and symptoms of worsening HF
  - Self management skills
  - Factors that may aggravate heart failure
  - Reasons for and appropriate use of medications (Class I, Level C)

- RN/APNs with training and expertise in enhancing patient and caregiver HF management skills may assess the patient in hospital and then follow them at home

Arnold JMO, Howlett JG, Ducharme A et al. *Can J Cardiol* 2008;24(1):21-40.

Lessons to be Learned from the Case

- **Classic patient: “fits the bill” of “at risk” senior**
  - Multiple functional deficits
  - Polypharmacy
  - Limited social support system
  - 2+ total number of chronic health conditions
- **Transitional care is imperative**
  - This patient fell through a 4 week “crack”/black hole
  - avoidable 11 day hospital readmission

TRANSITIONAL CARE IN HAMILTON

Transitional Care Team

- Funded through Aging at Home
- Program underway since October 2008
- Implemented at Hamilton General, currently rolling out to MUMC
- Program based in CCAC
  - Dedicated case-manager
  - ACNP

Target patients

- **General Medicine, Cardiology**
- **Heart failure and / or COPD**
- **Age over 55**
- **CSHA Frailty Scale 4 to 6 / 7 (mild to moderate frailty)**
- **Living in greater Hamilton area**
- **Expected to go home or retirement home**

TCP: Referral process

- **MRPs / charge nurse contacted by team member**
- **Potential participants screened by case manager**
- **Patient assessed by ACNP in hospital**
- **Home visit generally within 48 hours of discharge**
- **Regular visits and phone support as needed**
- **Program duration 1 to 3 months: monthly reviews of client progress regarding self-care**
- **Preliminary data**

TCP: Recruitment

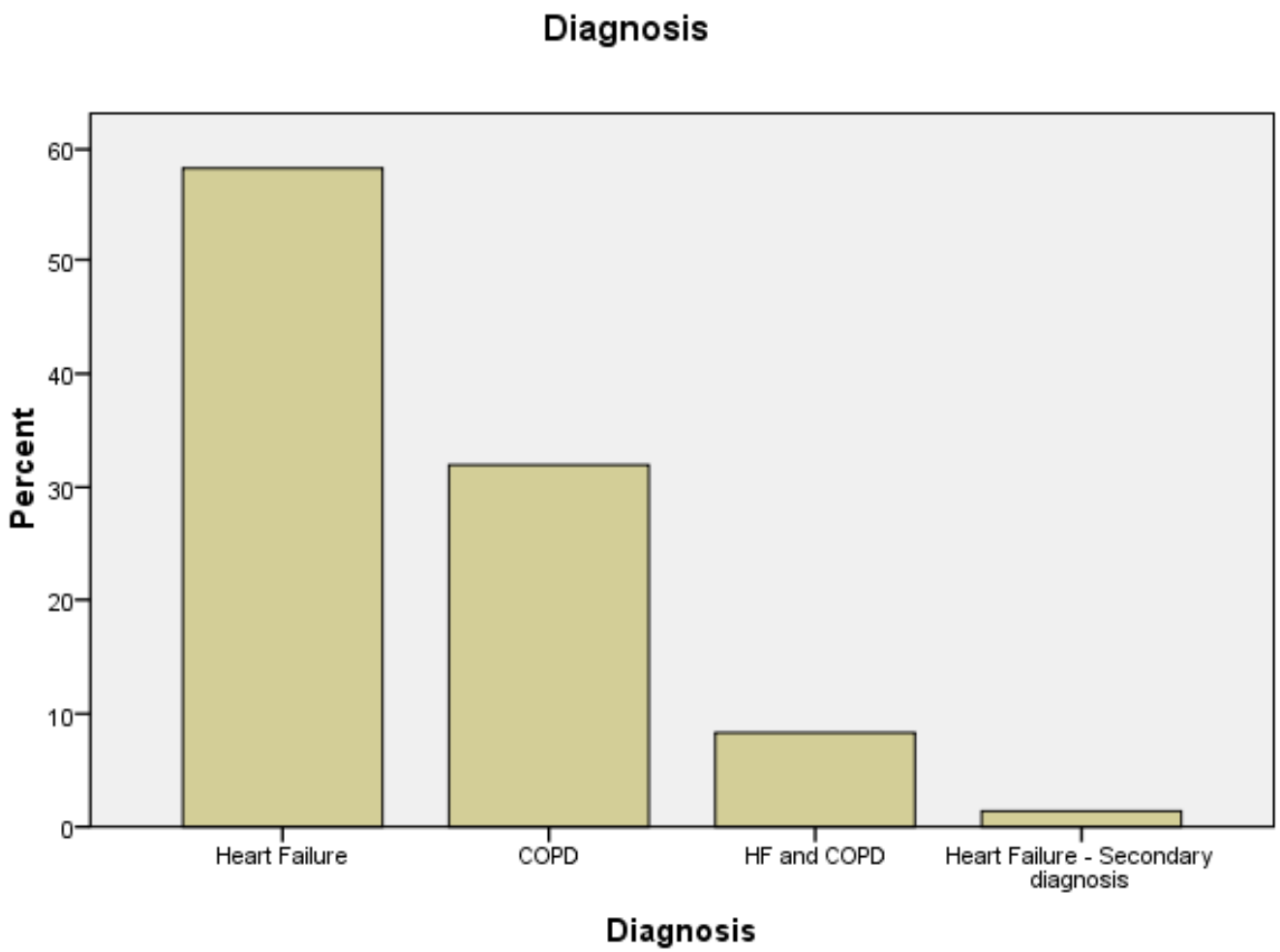
- As of April 2009: 72 clients
  - 10 withdrew
  - 5 deceased
  - 1 nursing home
  - 27 finished program
- Currently 107

TCP: ACNP activities

- Mean length of stay in program: 7.7 (3) weeks (4 to 13)
- Medication reconciliation: 56%
- Total number of:
  - Contacts: 9 (3), 6 to 20
  - Home visits: 2.6 (1.2), 1 to 5
- Time to family MD visit: 10.2 days (10.9), 1 to 49

TCP: Patient characteristics

- **Mean age: 76.9 (8.9)**
- **53% women**
- **Baseline Barthel Index: 87.4 (12.9), 45 to 100**
- **Baseline CSHA Frailty score: 5.3 (0.8)**


Diagnosis
Percent
60
50
40
30
20
10
0
Heart Failure
COPD
HF and COPD
Heart Failure - Secondary diagnosis
Diagnosis

Program evaluation

- **Preliminary evaluation: discharge and 3 months**
  - **Self-care: Therapeutic Self-Care Scale (HOBIC)**
  - **Barthel Index**
  - **Caregiver burden: Oberst scale**
  - **Quality of life: SF-12**
- **Patient / caregiver satisfaction**
  - **Likert scales, interview, field notes**

Tools

- **Therapeutic Self-Care: general self-reported self-care assessment**
  - **12 items, rated 0 to 5 (5 = able very much so)**
  - **0 to 60**
- **Oberst Caregiver Burden Scale**
  - **Considers 15 items from Demand and Difficulty point of view and derives composite score**
  - **1 low / little to 5 high / very much**

Results: 27 program completers

- **TDS: baseline vs. 3 months**
  - **40.1 vs. 52.7, improved by 12.6 (95% CI 9.6 – 15.7)**
- **Barthel Index; baseline vs. 3 months**
  - **88.2 vs. 89.4, improved by 1.2 (95% CI -1.4 – 4.2)**
- **Oberst: 8 caregivers; baseline vs. 3 months**
  - **Demand: 2.76 vs. 2.78 (NSS)**
  - **Difficulty: 2.16 vs. 2.02 (NSS)**
  - **Burden: 2.41 vs. 2.33 (NSS)**

Client satisfaction

- **Patients (N=26): 4.73 (0.45) (4 to 5)**
- **Caregivers (N=9): 4.22 (0.83) (3 to 5)**

Comments

- **“Would like program to continue”**
- **“found that care improved by other care providers with APN involvement”**
- **“reassuring that you can call someone”**
- **“teaching helpful”**
- **“someone to show exercise at home to build strength”**

Comments on program thus far

- **Early results in right direction**
  - **Particularly self-care knowledge**
- **Does not seem to worsen caregiver burden, despite focus on self-care**

Further work

- **Roll out to other sites: plan to recruit 175**
- **Work on database: integrate comorbidity, cognition, medications**
  - **Resident / student research opportunities!!!**
- **Eventually assess impact on health care utilization using RAI-HC to compare program clients with historical controls in Hamilton and elsewhere in Ontario**

Further work

- Integration of TCT into LHIN services
  - Linkages with primary care
  - Linkages with internal medicine: inpt and outpt
  - Linkages with geriatric medicine: inpt and outpt
  - Linkages with Heart Function clinics
  - Need for outpatient physiotherapy

Final thoughts

- **HF is a significant health problem among seniors**
- **Readmissions of frail seniors is an important problem**
- **Importance of multidisciplinary approach and disease management**
  - **Hospital discharge is a critical period**

Thank you

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Ministry of Health and Long Term Care
HNHB LIHN Aging at Home initiative