THE ROLE OF ADVANCED PRACTICE NURSES IN DECREASING LENGTH OF STAY AND REHOSPITALIZATION FOR HEART FAILURE PATIENTS: A SYSTEMATIC REVIEW

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The first APN program in the United States was launched in 1965 by Dr. Loretta Ford in collaboration with Dr. Henry Silver at the University of Colorado as a non-degree certificate program.
Brief History of APN profession in the U.S.A

- Progressively APNs education and responsibilities keep growing until our time, when APNs area of practice virtually is in every specialty (E.g, Primary Care, Cardiology, Hospitalist, etc)
Heart failure (HF) is a *chronic debilitating illness* that affects millions of Americans each year and these patients are faced with *chronic physical symptoms, emotional strain, and significant socioeconomic burden.*
Complex and costly chronic disease process associated with high morbidity and mortality
Background & Significance of the Problem

- Common Causes of Heart Failure
  - Underlying Causes
    - Structural abnormalities
  - Fundamental causes
    - Biochemical and physiological mechanisms
      - increased hemodynamic burden
  - Precipitating causes
    - Arrhythmias
    - Systemic infections
Background & Significance of the Problem

- 5.7 million patients with Heart Failure in the United States
- 670,000 new cases added to this pool every year
- 24.7% (26.9% for Medicare) become readmitted within 30 days of their discharge
Background & Significance of the Problem

- Average LOS for HF patients is 4.0 days (ranges 2.3-9.5 days; 10th %tile (3.1 days) and 90th %tile (5.0 days))
- In 2005, 1 in 8 death certificates mentioned HF
- Case fatality rates 30-day-10.4%, 1 yr-22% & 5 yrs-42.3%
Background & Significance of the Problem

- The estimated direct and indirect average annual cost of HF in the United States is $30 Billion (ACC, 2013)
- The lifetime cost of a single HF patient is more than $109,541 with a mean cost of $83,980 (Dunlay et al, 2011)
Purpose of the Literature Review

- The purpose of this Systematic Review was to explore “The role of Advanced Practice Nurses in preventing unnecessary length of stay and reducing rehospitalizations for heart failure patients within 30 days post discharge”
Background & Significance of the Problem

33% of HF pts are readmitted to hospitals within 90 days & 50% of these is caused by acute Decompensation

- None adherence with either diet guidelines or medications or both
  
  (Mueller, et al., 2002)

APNs as Care coordinator, excellent patient educators, case managers or primary care providers

(Sidani and Doran, 2009; Albert et al., 2010; Newhouse et al., 2011; Schroeder, Trehearne, & Ward, 2000)
Inclusion Criteria

❖ Studies published from 1990-2011
❖ English Language literatures
❖ Studies that focused on the role of APNs (both NP and CNS roles included) in reducing LOS & readmission rates among heart failure patients.
Methodology, Data Collection & Data Analysis

❖ Article Review
❖ n=42
❖ 26 studies eliminated due to their theme not specifically talking about LOS & Readmission rate.

❖ Final Aggregate Outcome
❖ n=16
❖ 2 articles eliminated for being out of the context for HF

❖ Final Aggregate Outcome
❖ n=14
Themes Extracted from the Selected Articles

Main Themes
- APNs role in reducing length of stay
- APNs role in reducing rehospitalization
- APNs role in reducing cost

Other Themes
- APNs role in increasing patient satisfaction
- APNs role in improving life styles changes (Quality of Life) and promoting self-care behaviors of patient
Length of hospital stay is reduced significantly, to an average of **3.5 days**, when APNs are involved in the care coordination and education of patients.

(Albert et al., 2010; Crowther, 2003; Delgado-Pasler, 2005; Bixby et al., 2000; Crowther et al., 2003; Brooten et al., 2003; Kegel, 1995; Newhouse et al., 2011; Naylor et al., 2004; Schroeder et al., 2000; McCauley et al., 2006)
2. APNs role in reducing rehospitalization

When APNs are used in a Practice:

- Time to next rehospitalization is longer
- Fewer deaths

(Crowther, M., 2003; Albert et al., 2010; Delgado-Pasler, 2005; Bixby et al., 2000; Crowther, et al., 2003; Dahll et al., 2000; Naylor et al., 1994.; Schroeder et al., 2000; McCauley et al., 2006)
3. APNs role in reducing cost

- **Lower mean total cost**

Presence of mid-level practitioners in 112 practices of 167 proved that hiring one or more mid-level providers, such as APNs, is related to cost saving $4,845 (Albert et al. 2010; Delgado-Pasler, 2005; Schroeder et al., 2000; Brooten et al., 2003)
Themes Extracted from the Selected Articles

◆ Other additional themes extracted

1. APNs role in increasing patient satisfaction
   ◆ Relationship with their patients (Relationship-based care)

(Naylor et al., 1994; Schroeder et al., 2000; McCauley et al., 2006)
2. APNs role in improving life styles changes (Quality of Life) and promoting self-care behaviors of patient

- APNs intentionally involved in their patients’ life style and use this opportunity to improve patients’ life

(Smuelders et al., 2010; Crowther, M., 2003; Delgado-Pasler, 2005; Bixby et al., 2000; Dahll et al., 2000; Schroeder et al., 2000; Brooten et al., 2003; McCauley et al., 2006)
Discussion

- The systematic review of the published literatures Shows
  - Advanced Practice Nurses have a great impact in reducing unnecessary length of hospital stays and reducing rehospitalizations after discharge through relationship-based care and care coordination.
The systematic review of the published literatures shows that life style changes and adherence to diet/medication guidelines is more practical when APNs are evolved in the care of HF patients.
Implications to Practice

- The use of APNs in practices implies significant contributions in the United States healthcare system in terms of:
  - Decreasing LOS,
  - Preventing readmissions and
  - Reducing overall healthcare cost.

Through relationship-based care
Outcome measures such as
- Patient satisfaction,
- Treatment and diet compliance and
- Improved quality of life are comparable or better when using APNs than no APNs in a given practice.
Implications to APNs

- This will encourage practices and/or hospitals to hire more APNs as Hospitalsists.
- Further Opportunities exist as patient & Family centered Cares evolve and become the buzz word.
Conclusion

- HF Failure program is one opportunity that the surveyed hospitals may use to decrease LOS and Rehospitalization.
- APNs can be instrumental in attaining this goal.
- Challenges to get a buy in from front line stakeholders such as attending physicians, cardiologists, & ED providers as well as Finance and Administration are all important milestones before launching the program.
Reference


Kegel, L. M. (1995). Advanced practice nurses can refine the management of


Newhouse, R., Stanik-Hutt, J., White, K.M., Johantgen, M., Bass, E.B., Zangaro,