Collaboration of Care in Advanced Chronic Kidney Disease

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BACKGROUND:

- Chronic Kidney Disease (CKD) affect 1 in 7 adult Americans (about 37 million people) (Centers for Disease Control, 2021).
- The decline of kidney function is associated with common co-morbid conditions including peripheral vascular disease (PVD), neuropathy and depression. The presence and management of these conditions affects patient outcomes, especially with advanced stages of CKD.
- Socioeconomic determinants of health can accompany advanced CKD, limiting ability to access care and often result in missed opportunities in preventative services and care.
- Increased visits to a primary care provider (PCP) is associated with a higher likelihood of receiving evidence based preventative care which improves long term outcomes and decreases costs (Hostetter et al., 2020).
- A Management Services Organization (MSO) assists healthcare providers and groups meet the financial, administrative and population health needs of their members. In assuming 'financial risk" for the delegated members, the MSO collaborates with providers to improve the delivery of value-based care.
- Within the membership of an MSO, a large number of patients with advanced CKD were noted to have inconsistent primary care visits and were missing preventative screenings.

PURPOSE:

- Initiate a program in an MSO for members with advanced CKD whom were missing wellness visits with their PCP to improve cost containment efforts with appropriate management and utilization of available resources.
- The overarching aim is to enhance care collaboration by improving CKD patient engagement with a PCP, increase the rate of preventative screenings, and screen for the need of other available resources to promote self-care behaviors.

CLINICAL QUESTION:

- In adult patients with advanced CKD, will the implementation of a coordination of care program improve engagement with their PCP and increase preventative screenings, when compared to current practice, within three months?

MODEL/NURSING THEORY

- This is a Quality Improvement (QI) project guided by the Model for Improvement and the Plan, Do, Study, Act (PDSA) cycle. This project was based on the theoretical framework of the Health Belief Model.

METHODS

Participants:

- Adults with advanced CKD (Stage 3b-5, and s/p transplant), identified through MSO claims. Participants are missing wellness visit with PCP and/or preventative screenings.

Setting:

- Patients were seen for a preventative wellness visit in person (home/facility) or telehealth visit (THV) by a field-based nurse practitioner (NP).

Instruments/Tools

- Measure time interval that patients were seen by PCP and/or accessed ER/Urgent Care utilization before and after NP wellness visit
- PHQ9 used for depression screening Cronbachs *a* of: (0.89) (Spitzer, 1999).
- Quantaflo device is FDA approved for noninvasive peripheral vascular disease screening.
- Nerve conduction device "DPNCheck" is FDA approved for noninvasive neuropathy screening.

Intervention and Data Collection

- Visits occur over a (3) month period, data collection spans (7) months.

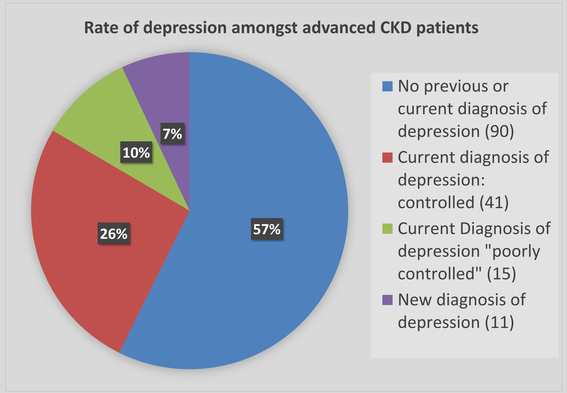
Analysis:

- Two tailed paired test used to assess statistical significance of time interval for PCP visit and/or ER/Urgent Care utilization before and after NP wellness visit.
- Descriptive statistics collected on other screening outcomes.

RESULTS

Demographics of participants & location of visit:

Race	Participants	Female	Male
African American	63	35	28
Asian	1	1	0
Caucasian	68	35	33
Hispanic	19	12	7
American Indian	3	2	1
Other	3	1	2
	N=157		
Method of Visit	**Telehealth**	**Home Visit**	**Clinic**
	83	48	26

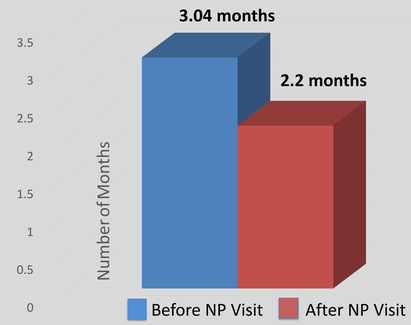


Screening for common co-morbidities if not previously completed	# Participants	No previous diagnosis or screening required	Pre-existing diagnosis	New diagnosis	Screening results normal
Neuropathy * IP	74	2	52	15	5
Peripheral vascular disease *IP	74	2	53	7	12

*** IP=In-person visit only**

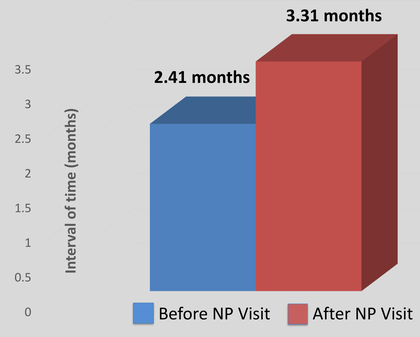
Supportive services referral reasons (n=157 received screening)	# participants requiring referral	Food insecurity	Housing insecurity	Transportation needs	Medication assistance	Disease management	Assist in home	No referral required
	46	12	1	7	4	7	4	111

PCP Follow Up Interval (months) before and after NP Visit



Statistical significance was found to exist in reducing the amount of time (in months) between patients visits with their PCP after the NP visit (p=0.0030).

ER/Urgent Care Utilization (months) before and after NP visit



Statistical Significance was found to exist in reducing the time (in months) between the utilization of Urgent Care/ER after the NP visit (p=0.0094).

KEY FINDINGS

- The NP visits effectively reduced the time patients took to visit their PCP from 3.04 to 2.2 months (p=0.0030).
- The NP visits effectively reduced ER/Urgent care utilization from 2.41 to 3.31 months (p=0.0094)
- The NP visits identified 7% pf patients (n=157) had an undiagnosed depression, and 10% of those with a known depression diagnosis (n=15) were poorly controlled.
- The NP referred 46 of the 157 patients to supportive services. Food insecurity was the most common need identified.
- Of the visits performed in person (n=74), the NP identified (15) new diagnosis of neuropathy, and (7) new diagnosis of PVD.

DISCUSSION

- The results of the QI project revealed successful PCP engagement in a shorter span of time after a completed NP initiated wellness visit in those with advanced CKD.
- The mean time of those who received ER/Urgent care within 7 months of the NP wellness visit increased, indicating decreased utilization.
- Screenings performed during the NP visit resulted in new diagnosis and/or poor control of known conditions, all of which require patients to follow up with their PCP in shorter intervals for further evaluation and management.
- This cohort of patients with advanced CKD experience depression at a much higher rate than the national average of 8.4% (National Institute of Mental Health, 2022). It is essential to consider this fact when treating patients with advanced CKD and other medical complexities.
- Providing alternative methods for visits to include home and telehealth provide flexibility in patient scheduling.
- This QI project addresses significant barriers that patients with advanced chronic disease face in maintaining their health and wellness.
- Socioeconomic determinants of health are frequently seen in this and other medically complex patients and screenings for assistance should be routinely incorporated into medical visits.

LIMITATIONS

- Out of the 157 total participants, (15) were excluded from analysis as outliers due to no PCP visit either prior to or after NP visit.
- Out of the 157 total participants, only (50) received treatment in the ER/Urgent care both before and after the NP wellness visit. The rest of the participants were excluded from analysis as outliers due to no ER/Urgent Care utilization in the seven months prior to and after the NP visit.
- Data captured via claims which may have not included all visits if claims had not yet been processed.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- Through this NP driven project, strategies have been identified to assist in ensuring preventative care and collaborative services are offered to high risk patients.
- NPs are uniquely positioned to facilitate the collaboration of care for medically complex patients based on a strong, educational foundation focusing on a patient centered holistic approach to healthcare management.

REFERENCES

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Outcome: After receiving a preventative wellness visit by a nurse practitioner, participants with advanced chronic kidney disease were more likely to follow up with their PCP, and less likely to visit urgent care.

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