SJIF Impact Factor: 3.458

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 3.
Issue: 1.
Page N. 118-124
Year: 2019

Review Article www.wjahr.com

USING THE AHRQ CHRONIC CARE TOOLKIT TO IMPROVE OUTCOMES IN PATIENTS WITH END-STAGE RENAL DISEASE

Dr. Emilia Addo*

Mullica Hill, NJ, USA.

Received date: 10 December 2018 **Revised date:** 31 December 2018 **Accepted date:** 21 January 2019

***Corresponding author: Dr. Emilia Addo**

Mullica Hill, NJ, USA.

ABSTRACT

Background and Purpose*:** The management and treatment of chronic diseases, such as end-stage renal disease, is often unproductive because of patients' poor adherence to treatment. The chronic care model toolkit is an Agency for Healthcare Research and Quality supported framework, associated with improved outcomes in patients living with chronic disease. This project was to develop and plan an educational program using the chronic care model toolkit for the interdisciplinary clinical staff of a renal hemodialysis center. AHRQ chronic care model educational program is an innovative quality initiative that leads to evidence-based practice. It addresses key aspects of developing and building a multidisciplinary team to deliver and achieve best practices for patient care, underutilized among End Stage Renal Disease patients. ***Method*:** Educational program materials were developed, including a plan for future implementation over 6 weeks in 2-hour twice-weekly sessions. Program planning accounted for the mixed roles and responsibilities of the interdisciplinary clinical team members. The pretest and posttest materials were developed from the toolkit. ***Results: It is recommended that clinical metrics be tracked through a Quality Assessment Performance Improvement measure to evaluate potential long-term influences of the program on patient adherence and outcomes. ***Conclusions*:** The project may enhance teamwork and improve clinical outcomes by using the AHRQ toolkit. This evidence-based initiative has *implications* for advanced nurse practitioners as leaders building a multidisciplinary team through workforce coordination and practice structuring and redesign to deliver and achieve best practices for patient. The processes are conducive for cost-effective, efficient, timely and safe management.

KEYWORDS: AHRQ, *implications.*

INTRODUCTION

The Agency for Healthcare Research and Quality (AHRQ) chronic care toolkit provides a multi-modal approach for adherence management for populations affected by chronic disease. This paper proposes use of the toolkit for the treatment of patients with end-stage renal disease (ESRD) receiving treatment at an outpatient renal hemodialysis center. Education based on the toolkit for all staff and healthcare providers involved in patient care can improve staff collaboration and interactions with patients, reduce healthcare fragmentation and costs, and lead to improved clinical outcomes. Modification of the culture of the practice setting and teambuilding led by advanced nurse practitioners will lead to greater understanding of the barriers faced by patients with ESRD and will thereby lead to greater adherence to scheduled treatments and the use of prescribed medications, as well as recommended lifestyle modifications.

End-stage renal disease results from failure of the kidneys to remove toxins and fluid adequately to maintain a normal physiological state. Dialysis is instituted when the estimated glomerular filtration rate (eGFR) drops to less than 15ml/min (National Kidney Foundation [NKF], n.d.). Various hindrances impede patient adherence to scheduled treatments (Kammerer, Garry, Hartigan, Carter, & Erlich, 2007; Lingerfelt & Thornton, 2011; Mukakarangwa, Chironda, Bhengu, & Katende, 2018), but it has been reported that a structured educational program can increase patients' knowledge and awareness and positively impact self-management behaviors (Lingerfelt & Thornton, 2011).

The AHRQ chronic care toolkit includes educational materials (created by the Delmarva Foundation for the AHRQ) to enable implementation of the AHRQ chronic care model (CCM) by helping to identify barriers to successful team functioning through regular patient care

meetings and shared responsibility for tasks (AHRQ, 2014, 2017). The educational tool promotes team collaboration and enhances interactions between the patient and the multidisciplinary care team for the improvement of clinical outcomes (AHRQ, 2014, 2017). The CCM is a conceptual framework applied by identifying the essential elements of the healthcare system and encouraging comprehensive, high quality chronic disease care. It incorporates evidence-based change concepts under each element to bring about productive interactions between an informed patient, who takes a proactive approach to care, and expert healthcare providers with resources (Wagner, 2010, 2018).

BACKGROUND

Adherence Issues in Patients with End-Stage Renal Disease

According to the United States Renal Data System [USRD], 2013, 2015), newly reported cases of ESRD are as high as 318.5 per million population and 21,000 cases per year. The prevalence of chronic kidney disease is predicted to increase by 2030 with estimated new onset of ESRD exceeding 450,000 cases (USRDS, 2013, 2015). The CCM defines adherence as the extent to which the patient follows medical instructions and is an active collaborator in the treatment process. Adherence to any treatment regimen is reflected in the patient's behavior, that is, the patient follows treatment as scheduled and/or makes lifestyle changes recommended by a healthcare provider. Mutual agreement by the patient and healthcare provider is necessary to achieve effective clinical practice with best health outcomes.

For ESRD patients, adherence is influenced by modifiable factors, including psychosocial issues and self-management support (Mukakarangwa et al., 2018). The NKF (n.d.) reports on adherence issues cited by patients as consisting of discomfort, complications during treatment, and attempts to exercise autonomy and maintain a form of independence. Fluid and diet restrictions, as well as adherence to multiple prescribed medications, must be reached.

Chronic dialysis is instituted when the patient is classified with ESRD Stage 5, a glomerular filtration rate of less than 15/ml/min (NKF, n.d.; USRDS, 2013). When the prescribed dialysis treatments and medication use are not fully utilized, the result is disease exacerbation and an increased burden on healthcare resources (Kammerer et al., 2007; Mukakarangwa et al., 2018; NKF, n.d.). Missing three or more dialysis therapy treatments out of 12 to 13 prescribed per month has been documented to compromise patient health. The complexity of ESRD requires the involvement of healthcare providers, the patient, and the healthcare system to avoid increasing health consequences that lead to greater social and financial burdens (Kammerer et al., 2007; AHRQ, 2014, 2017). Lingerfelt and Thornton (2011) demonstrated the importance of promoting self-management behaviors among the ESRD patients to improve clinical health outcomes.

Support for the CCM in Disease Management

Studies have confirmed the CCM's usefulness for various areas of specialty practice (AHRQ, 2014; Davey et al., 2015). Pasricha et al. (2013) used elements of the CCM at an HIV clinic and reported a positive impact. Their systematic review examined the effectiveness of the decision support and clinical information systems elements of the CCM for people living with HIV. These two components of the model had a positive impact in changing provider performance. (See Figure 1 for chronic care model framework adapted for ESRD.)

Fortin et al. (2013) used a descriptive qualitative method to collect data from various stakeholders including decision-makers and primary care professionals to evaluate the adaptation and implementation of an intervention involving chronic disease prevention management into primary healthcare for patients, before, during, and after implementation (Fortin et al., 2013). Most providers utilized CCM effectively; especially noted was the collaboration that took place between APNs and physicians.

The impact of the CCM on nursing practice with regard to patient health and safety has resulted in its adoption as a conceptual framework for practice. Bissonnette, Woodend, Davies, Stacy, and Knoll (2013) evaluated whether an APN-led interprofessional collaborative chronic care approach would improve clinical outcomes for kidney transplant patients compared with a traditional physician-led model. The intervention included three elements from the CCM: strategies for disease self-management, shared decision-making, and healthcare system reorganization. The primary outcome cited was "the proportion of patients attaining at least seven of the nine targets as per published guidelines" (Bissonette, et al., 2013, p. 232). A greater proportion of the intervention group had significantly fewer emergency room visits (68% vs. 10%, $p = 0.0001$) and had discussed end-stage treatment options (88% vs. 13%; $p = 0.0001$) compared with controls. Overall results demonstrated that the APN-led approach based on the CCM had the potential to improve clinical outcomes for renal transplant recipients.

The Chronic Care Toolkit for ESRD

The chronic care toolkit is an evidence-based educational guide that addresses key aspects of developing and building a multidisciplinary team to deliver and achieve best practices for patients with chronic care needs (AHRQ, 2014, 2017; Davey et al., 2015). The best approach is observed when the patient, the family, the community, and all healthcare providers work together for effective coordination and self-management support (AHRQ, 2014, 2017). Although ESRD is a complex condition, it is a modifiable condition. Identification of a knowledge gap led to the development of this AHRQ

chronic care educational program, which is intended to serve as a roadmap for practice improvement for ESRD patients with adherence issues.

The challenges of nonadherence and suboptimal healthcare management are minimized when patient self-management support interventions are implemented within a structured healthcare environment (Lingerfelt & Thornton, 2011). This project entails chronic care toolkit education for an interdisciplinary team with documents created for implementation and evaluation, including a pretest and posttest survey in the form of the Team Health Audit Questionnaire (AHRQ, 2014). (See Figure 2.) Directed interventions are designed to promote support for patients' self-management by providing a goal-setting worksheet and identifying barriers that impact adherence. Review of goal setting worksheet should be executed during QAPI (See Figure 3.) A sound, measurable operational approach was designed to overcome barriers, achieve costs savings, and achieve greater patient satisfaction by targeting quality performance and improving adherence issues, patient clinical outcomes, patient safety, and enhanced self-management behaviors. The initiative is intended to be communicated for broad knowledge dissemination in the healthcare community (AACN, 2015, 2006).

The project was developed as a doctor of nursing scholarly project following a needs assessment conducted by the author. The needs assessment was performed through the use of facility's quality assessment and performance improvement tool. Quality Assessment and Performance Improvement (QAPI) tool is a systematic method of identifying patients unmet goals in adherence by reviewing laboratory results. Outcome measurement such as urea clearance, fluid status, anemia, infection rates, bone mineral metabolism, nutritional status, hospitalization and psychosocial needs revealed patients needs. It was supported by key stakeholders at the author's practice site, an outpatient renal hemodialysis center in an urban area that uses QAPI as its benchmark for performance scores; the facility compares results with other dialysis facilities to establish goals and initiate plans for improvement as needed. It was designed as a 6-week program to educate interdisciplinary clinical staff who are actively engaged in the goal of improving patients' adherence to vital treatments about the CCM and the AHRQ chronic care toolkit. It is expected that after participation in the six sessions participants will verbalize clear understanding and provide feedback on the model and the toolkit.

The project is designed as an educational program consisting of three modules delivered over 6 weeks in 2-hour twice-weekly sessions. The overarching goal of the project is to improve self-management behaviors in ESRD patients by enhancing staff knowledge about team health based on mutual trust, respect, sharing, and collegial support. Building an ideal team, comprised of mixed roles and responsibilities, is needed to deliver the best quality care using the AHRQ chronic care toolkit and improve adherence among ESRD patients. Prior to participation all members of the team are to complete the AHRQ (2014, 2017) Team Health Audit Questionnaire (THAQ), which should also be completed at the end of the 6-week period.

Components of the educational sessions are discussed in further detail as follows (see also Figure 4).

Module 1: Educational series overview and objectives. The targeted goal is to improve the specified ESRD patients' adherence to treatment by enhancing staff knowledge on CCM with team-building factors. The purpose of the THAQ is to assess the strengths and weakness of the existing ESRD practices at the facility to identify barriers to successful functioning regarding survey measures. The THAQ (AHRQ, 2014) has 15 statements; all attendees rate their level of agreement using a scale of 1-10, with 1and 2 indicating Strongly Disagree, 5 and 6 indicating Not Certain, 9 and 10 indicating Strongly Agree. The statements are as follows: In your opinion:

1. The vision and mission of the team are clear and all members have agreed to work toward them.
2. Team members understand expectations and boundaries for team activities.
3. Specific and measurable goals have been defined.
4. The team purpose aligns with the large organization and with the needs and objectives of team members.
5. The team leader does a good job.
6. The contribution I can make to the team is clear to me and my fellow team members.
7. The knowledge, skills, and experience of our team members is appropriate for our mission.
8. Team members listen to and understand each other.
9. Information sharing is very good within the team.
10. The team delegates tasks and follows up very well.
11. Team members manage disagreements and conflicts constructively.
12. Plans are made, problems are solved, and decisions are analyzed effectively by the team.
13. Our team is making good progress toward our goals.
14. The team's measures are effective in tracking our progress.
15. Our team invests time in learning how to be a better team.

Module 2: The Team Health Audit Questionnaire will be used to uncover barriers to effective teamwork such as understaffing, undefined roles, lack of leadership, inefficient processes, burnout and low morale, and resistance to change and to more work being added to the existing workload (AHRQ, 2014). This training and development module will aim to address barriers by doing the following:

1. Define leadership roles.
2. Redefine team roles and responsibilities clearly.
3. Provide training on effective team practices and team competencies.

4. Provide leadership coaching for roles at the facility.
5. Implement guidelines for how team members treat one another.
6. Address Collaborative Manager Module, Delivery System Design, and Self- Management Support.

Module 3: The Collaborative Care Manager Module (AHRQ, 2014) displays and explains the relationships among all team members by defining the roles of staff members, clinical experts, and physicians as applicable to the unit team members. Roles are defined to apply the CCM elements for best practice. A team leader assignment will be addressed. The CCM as a conceptual framework is applied during a four-step quality improvement strategy by identifying the essential elements of the healthcare system and encouraging comprehensive, high quality chronic disease care.

The CCM consists of six elements: the community, the health system, self-management support, delivery system design, decision support, and clinical information systems. CCM as an innovative care model incorporates evidence-based change concepts under each of the elements to bring about productive interactions between an informed patient who takes a proactive approach to care and expert healthcare providers with resources (Wagner, 2010, 2018). The DNP project focused on how to improve the environment with CCM knowledge on self-management and delivery system support.

Delivery System Design (AHRQ, 2014; Wagner, 2018) addresses who is on the health care team and in what ways team members interact with patients and how care is delivered for best clinical, cost-effective, and functional outcomes. The focus typifying adherence issues among the ESRD population is as follows:

- Promote proactive delivery of clinical care and support of self-management within the system. Encourage active participation and membership on the patient advocacy committee (PAC). The team should meet monthly to address and correct needs and concerns.
- Promote patient activation as a key component of the AHRQ chronic care toolkit. Patient activation affects delivery system design/decision support, goal setting, problem-solving/contextual counseling, and follow-up coordination.
- Encourage teamwork by distributing tasks among team members. There should be continuous quality improvement evaluation and continuing education for team members.
- Ensure continuous follow-up to achieve and sustain evidence-based practice by effective patient empowerment in quality health outcomes. Invite significant others and encourage them to participate.

Self-Management Support (AHRQ, 2014; Wagner, 2018) addresses how the healthcare provider can help patients live with their health conditions. The goal setting worksheet presented in Appendix D is used. Pertinent to the ESRD population is promoting self-management behaviors that may improve adherence issues as follows:

- Teach self-management through the use of tools and information to be shared in a group format. Health topics covered should enhance self-management.
- Examine inconsistencies in presenting for dialysis treatments and timely medication use.
- Ensure continuity in patient team meetings by empowering the use of effective self-management support strategies (the five As is the self-management support element of the chronic care model by Wagner, 2018) as follows:
  - Assess the knowledge, beliefs, and patients' behaviors to enable better understanding of their values.
  - Advise based on patient needs supported by scientific evidence, not provider biases.
  - Agree on goals that are essential to patients and provide achievable actions.
  - Assist by identifying barriers using a problem-solving approach.
  - Arrange a specific follow-up plan including use of community resources.
- Encourage patient-centered group dynamics and peer support to help with problem-solving for self-management, reinforced by team members (patients' support system and or healthcare team).
- Suggest support group weekly meetings based on identified problems.
- Motivate and empower patients to be proactive in their care management.

The four-step quality improvement strategy for performance education based on CCM elements for the identification of barriers that impact adherence consists of the following:

- Teach staff to assess and identify patient groups that have the tendency to miss treatments and have adherence issues. Apply elements of the CCM, such as decisional support, during assessment stages. Explain to staff the importance of involving patients in all decisions. Patients should be invited individually to team meetings for root-cause analysis, including the cause of the adherence issues and patient preferences. CCM elements on delivery systems and community resources and policies are to be incorporated. Organizational support systems and information technology knowledge is crucial for evidence-based data collection. The implementation site has a full documentation system that is designed to support electronic medical records. This information technology system captures and uses critical information for clinical care. Use of this information can raise staff awareness of each patient's activation on the key components of the CCM: delivery system design/decision support, goal setting, problem-solving and contextual counseling, and follow-up coordination.
- Educate staff on how to collect data on high-risk groups and analyze results with team members. Self-

management support systems of the CCM are individualized once the patients' preferences are identified and supportive counseling is provided. The purpose of collecting the identified risk groups is for problem-solving.

- Reinforce education on the importance of evaluating and analyzing collected data for best practice. Emphasize that all decisions should be supported by scientific evidence. The planned implementation is to be continuously analyzed and evaluated for best practice.
- Advise staff of the need to sustain decisions for best practice that are based on scientific research outcomes.

Moving forward with the CCM educational knowledge the team will assess needs and goals, create a proactive plan of care, monitor patients for adherence, follow up and respond to change, support self-management goals, link to community resources, and align resources with changing patient and population needs. Staff knowledge of the chronic care toolkit can be measured but should be reassessed periodically with the posttest. Best practice would be to review, summarize, and evaluate staff knowledge and competence regarding the AHRQ chronic care toolkit annually using the THAQ.

There should be a plan for building on the CCM and AHRQ chronic care toolkit knowledge and for training new employees to improve care for ESRD patients. Risk factors need to be identified, with motivated team support focused on patient empowerment to improve adherence. The project involves a face-to-face interactive teaching and learning approach to be instituted among all attendees. A sound measurable operational approach is proposed to identify barriers and target areas for quality performance improvement such as adherence rates/numbers, clinical outcomes, patient safety, and patient satisfaction.

The QAPI tool used by the facility to determine overall quality evaluates improved adherence among the ESRD patients. The facility's quality improvement agenda is to involve all caregivers and to commit to high quality performance that will bring about increased patients' satisfaction. The AHRQ chronic care toolkit educational project mission aligns with the facility's mission for improving clinical outcomes through collaborative teamwork. The program outline, the pretest, and the posttest are the deliverables from this project. The pretest and posttest will measure whether the education intervention enhanced staff knowledge on the AHRQ toolkit, and the QAPI instrument will measure whether its adaptation improved clinical outcomes.

Following implementation of the education program, it is expected that QAPI results will be used to guide the evaluation process. The Team Health Audit Questionnaire report should be used along with anonymous monthly quality improvement feedback questionnaires for all participants in the educational initiative. The questionnaire will ask about experiences during the initiative using a satisfaction scale based on the THAQ survey at baseline and 6 weeks after staff training. All data collected should be appraised, synthesized, and summarized at the end of a 6-month evaluation period and at regular intervals thereafter. The best gauge of progress in the improvement of ESRD adherence issues is by benchmarking (i.e., comparing QAPI results with other dialysis facilities that have not implemented the AHRQ toolkit staff education). Recommendations for future improvements should focus on tracking dialysis treatment adherence and adherence issues through the integrated use of CCM and QAPI measurements.

Implications for Evidence-Based Practice

Research has shown limitations of CCM adoption stemming from unprepared, unmotivated key stakeholders (Escola, 2018; Parchman et al., 2008). Determination of the program strengths and limitations will be inconclusive until the project is fully completed and evaluated after 6 months of implementation. It is best to follow the plan for measuring outcomes that is included in the project and implemented by APN as team leader. According to Bissonnette et al. (2013), an APN-led approach based on the CCM improved clinical outcomes (2013). Murray, Bissonnette, Kryworuochko, Gifford, and Calverley (2013) reported that decision-making strategies that involved patients and the coordination and integration of service delivery systems, elements of the CCM, created a meaningful patient-centered approach to managing ESRD patients. Davey et al. (2015), in their study on the adoption of the CCM, discuss the importance of teamwork based on collaboration.

AHRQ chronic care toolkit adoption serves as both a change process and an evidence-based theoretical framework to guide the project plan. The intention of the project, to foster sustained practice change and leadership activities based on improved communication involving, patients, family members, and the facility staff, in coordination with outside resources, can lead to improved health outcomes and a transformed healthcare system where changes are sustained along with patient safety and improved healthcare delivery (American Association of Colleges of Nursing, 2006, 2015). Quality healthcare delivery through chronic care toolkit staff education and knowledge enhancement is the basis for practice change, modifying the social and physical environments of practice and promoting best quality health outcomes (AHRQ, 2014, 2017; Escola, 2018; Zaccagnini & Waud White, 2011).

Use of the AHRQ chronic care toolkit has the potential to improve adherence and clinical outcomes governed by advanced nurse practitioner, while also enhancing the professional practice of nursing. Implementation at the practice site led by APN can change the culture of

practice, improve patient care delivery, and promote patients' self-management behaviors. It is hoped that this AHRQ chronic care tool kit initiative will serve as an adjunct to existing practice guidelines, serving as an innovative standard of practice to improve ESRD adherence.

SUMMARY AND CONCLUSIONS

Many scholarly works recommend that the health system culture needs modification, coupled with behavioral changes by healthcare providers, to achieve best practices and high quality patient care. A needs assessment conducted at the practice facility determined that there is a need for staff education regarding the AHRQ chronic care toolkit framework to improve treatment adherence among ESRD patients. ESRD patients with adherence problems pose a healthcare challenge that requires team-based efforts in care management to achieve maximum health benefits. Research data provided assurance that implementation the AHRQ chronic care toolkit led by a APN can improve adherence and quality of life in patients with ESRD.

A 6-week educational program developed for clinical staff is to evaluate findings from a Team Health Audit Questionnaire before the implementation of the program. The THAQ administered at the end of the 6 weeks is for comparison purposes. Findings from this report, along with monthly QAPI data, can be used to measure clinical health outcomes. It is hoped that QAPI tool integration, along with increased knowledge of the chronic care model toolkit, will lead to improved adherence among ESRD patients.

REFERENCES

1. Agency for Healthcare Research and Quality. (2014). *Toolkit for implementing the chronic care model in an academic environment.* Retrieved from http://www.ahrq.gov/professionals/education/curriculum-tools/chroniccaremodel/index.html.
2. Agency for Healthcare Research and Quality. (2017). *Multiple chronic conditions.* Retrieved from http://www.ahrq.gov/professionals/systems/long-term-care/resources/multichronic/mcc.html.
3. American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice*. Washington, DC: Author. Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf.
4. American Association of Colleges of Nursing. (2015). *The doctor of nursing practice: Current issues and clarifying recommendations* [Report from Task Force on the Implementation of the DNP]. Retrieved from https://www.aacnnursing.org/DNP.
5. Bissonnette, J., Woodend, K., Davies, B., Stacey, D., & Knoll, G. A. (2013). Evaluation of a collaborative chronic care approach to improve outcomes in kidney transplant recipients. *Clinical Transplantation, 27*(2): 232-238. doi:10.1111/ctr.12068. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
6. Davey, C., Bleased,J., Hueiming, L., Tchan, M., Ponniah, S., Brown, A.(2015) Effectiveness of chronic care models: opportunities for improving healthcare practice and health outcomes: A systematic review. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4448852/.
7. Escola, A. N. (2018). *Health education to prevent chronic diabetes mellitus complications in primary care*. Retrieved from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452018000100214.
8. Fortin, M., Chouinard, M. C., Bouhali, T., Dubois, M. F., Gagnon, C., & Bélanger, M. (2013). Evaluating the integration of chronic disease prevention and management services into primary health care. *BMC Health Services Research, 13:* 132. doi:10.1186/1472-6963-13-132. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
9. Kammerer, J., Garry, G., Hartigan, M., Carter, B., & Erlich, L. (2007). Adherence in patients on dialysis: Strategies for success. *Nephrology Nursing Journal, 34*(5): 479-486. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
10. Lingerfelt, K. L., & Thornton, K. (2011). An educational project for patients on hemodialysis to promote self-management behaviors of end stage renal disease. *Nephrology Nursing Journal, 38*(6): 483-489. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
11. Mukakarangwa, M. C., Chironda, G., Bhengu, B., & Katende, G., (2018). Adherence to Hemodialysis and Associated Factors among End Stage Renal Disease Patients at Selected Nephrology Units in Rwanda: A Descriptive Cross-Sectional Study *Nursing Research and Practice*, 2018: Article ID 4372716: 8 pages https://doi.org/10.1155/2018/4372716. Retrieved from https://scholar.google.com.
12. Murray, M. A., Bissonnette, J., Kryworuochko, J., Gifford, W., & Calverley, S. (2013). Whose choice is it? Shared decision making in nephrology care. *Seminars in Dialysis, 26*(2): 169-174. doi:10.1111/sdi.12056. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
13. National Kidney Foundation. (n.d.). *End stage renal disease*. Retrieved from http://www.kidney.org/professionals/KDOQI/guidelines_commentaries.cfm.
14. Parchman, M. L., Pugh, J, A., Culler, S, D., Noel, P, H., Arar, N, H., Romero, R, L., & Palmer, R, F. (2008), A group randomized trial of a complexity-based organizational intervention to improve risk factors for diabetes complications in primary care settings: A study protocol. *Implementation Science, 3*(15): 1-7. doi:10.1186/1748-5908-3-15. Retrieved

from http://libraryguides.waldenu.edu/webinararchives.
15. Pasricha, A., Dienstadt, R.T., Moher, D., Killoran, A., Rouke, S. B., & Kendell, C. E. (2013). Chronic care model decision support and clinical information systems interventions for people living with HIV: A systematic review. *Journal of General Internal Medicine, 28*(1): 127-135. doi:10.1007/s11606-012-2145-y Retrieved from http://libraryguides.waldenu.edu/webinararchives
16. United State Renal Data System. (2013). USRDS annual data report. Retrieved from www.USRDS.org.
17. United State Renal Data System. (2015). USRD annual data report. Retrieved from www.USRDS.org.
18. Wagner, E. H., MacColl Institute for Healthcare Innovation, Group Health Research Institute (2018) Improving Chronic Illness Care. Retrieved from http://www.improvingchroniccare.org
19. Wagner, E. H., MacColl Institute for Healthcare Innovation, Group Health Research Institute. (2010). Academia, chronic care, and the future of primary care. *Journal of General Internal Medicine, 25*(4): S636-S638. doi:10.1007/s11606-010-14426. Retrieved from http://libraryguides.waldenu.edu/webinararchives.
20. Zaccagnuni, M. E., & Waud White, K. (2011). *The doctor of nursing practice essentials: A new model for advanced practice nursing.* Sudbury, MA: Jones & Bartlett Learning.