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**Improving Same Day Surgery Patient Outcomes Through a Nurse Practitioner Led
Telephone Follow-up Call**

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Abstract

Background: On average, patients experience one to seven problems post-hospital discharge leading to increased unplanned emergency room visits, hospital readmission, and worse outcomes. The average cost of a single hospital admission is \$15,477, an emergency room visit \$1,389, and treatment for a surgical site infection \$10,443-\$25,546. Additionally, the Center for Medicare and Medicaid Services (CMS) imposes fines on hospital systems with high readmission rates. Currently, the Southern California hospital this project was implemented at has a 15.5% hospital-wide unplanned 30-day readmission rate with a national average of 15.2%.

Purpose: The purpose of this evidence-based practice project was to implement a Nurse Practitioner (NP) led post-discharge telephone follow-up program to improve quality of life and medications adherence among same day vascular surgery patients.

Methods: The target population for this project was same day vascular surgery patients. Eight patients were recruited and enrolled from September 2021 to February 2022. Each patient was administered the PROMIS Global Health and Medication Adherence Questionnaire (MAQ) questionnaires pre-procedurally and during follow-up calls at 3-, 7-, and 14-days. Additionally, during the phone follow-up, the NP reinforced discharge instructions and medication adherence.

Results: Fifty percent of patients showed improvement in their MAQ score 2 weeks following care. In addition, 50% of patients showed an increase in their PROMIS Global Physical Health T-score, and 25% of patients had an increase in their PROMIS Global Mental Health T-score at 2-weeks follow-up.

Implications: Unplanned post-discharge emergency room visits and hospital readmissions remain a challenge to efficient quality care. A NP led post-discharge telephone follow-up is

a simple and cost-effective intervention that increases patient medication adherence and improves patient outcomes and quality of life.

Improving Same Day Surgery Patient Outcomes Through a Nurse Practitioner Led Telephone Follow-up Call

Patients average one to seven problems post hospital discharge leading to hospital readmission and worse outcomes (Clari et al., 2015). Difficulty with medication adherence, performing activities of daily living, pain, and adherence to their discharge instructions are common problems experienced within the first week of hospital discharge leading to premature contact with the health care system (Clari et al., 2015). The PICOT question for this project was: In adult patients undergoing same day surgery, will implementing a nurse practitioner-based discharge telephone follow-up 3-, 7-, and 14-days post-surgery compared to no follow-up, result in a 50% increase in medication adherence and improved quality of life over a two-week period?

Background, Significance, and Evidence

A single hospital admission can average \$15,477, an emergency room visit \$1,389, and a surgical site infection \$10,443-\$25,546 (Alltucker, 2019; Berriors-Torres, 2017). Additionally, the Center for Medicare and Medicaid Services (CMS) imposes fines on hospital systems with a high readmission rate. The project site in San Diego has a 15.5% hospital-wide unplanned 30-day readmission rate exceeding the national average of 15.2 % (Hospital Care Data, 2021).

A cause of readmission is patient confusion with their home recovery course. Despite using the teach back method and providing a copy of the discharge instructions to the patient and family, one study found patients had a lack of understanding of their instructions and difficulty contacting their surgical team for post-operative questions and concerns (Horstman, 2017). To mitigate this some services have begun to call patients post discharge. Follow-up calls reviewing discharge instructions, medications, and daily life activities have been shown to improve post-surgical outcomes (Clari et al., 2015). Calls averaging under five minutes have been proven

effective in providing education and reinforcing the discharge instructions while ensuring the patient feels comfortable with their recovery.

Purpose and Aim of Intervention

The purpose of the nurse practitioner (NP) led discharge telephone call is to improve quality of life and medication adherence among same day vascular surgery patients leading to improved patient outcomes and a decrease in CMS penalties. A NP will contact the patient post discharge at 3-, 7-, and 14-days post-operatively and assess the patient's quality of life and medication adherence. Discharge instructions and follow up instructions will again be reviewed, and any patient questions or concerns addressed.

Methods, Project Design, and Population

Designed as a prospective case series and using the Iowa Model for evidence-based practice, consecutive same day vascular surgery patients at a local acute care hospital in San Diego were analyzed for enrollment. The Iowa Model "provides guidance for nurses and other clinicals in making decisions about clinical and administrative practices that affect patient outcomes" (Melnyk & Overhold, 2015, p. 282). It was selected for its ability to integrate evidence-based practice with the goal of improving patient outcomes, contains feedback loops, and is easy to use (Melnyk & Overhold, 2015). Institutional Review Board approval was obtained from the Doctor of Nursing Practice Program. From September 2021 to February 2022, 86 patients were screened. Twenty-two patients were excluded due to lack of translator services and 25 were admitted to the hospital. Although 39 patients were found eligible, only 12 agreed to participate. Four patients were lost to follow up. Patients were interviewed during the peri-operative phase and informed consent obtained. Assessments were made at 3-, 7- and 14-days post discharge. Caller reinforced discharge instructions and assessed overall well-being and

medication adherence. Mental and physical health was graded using the PROMIS Global Health questionnaire and medication adherence was classified using the MAQ questionnaire.

Participants' physical health (PH) and mental health (MH) were identified as poor (PH score < 35, MH score < 28), fair (PH score < 42, MH < 40), and good (PH score > 42, MH score > 40) using established T-score cutoff (Hays et al., 2015). Medical adherence was stratified into high (MAQ greater than 8), medium (MAQ score 6 to 8) and low (MAQ score less than 6). Lack of medication adherence was defined as having a medication adherence score of low or medium (Morisky, 2008) and once identified, strategies to improve adherence were discussed and a plan formulated. Plan efficacy was then assessed during subsequent follow-up call and modifications were made if there were no improvements in questionnaire scores. The questionnaires were then deidentified, graded, and labeled with the date of the procedure to ensure HIPPA compliance. The primary outcome was improvement in questionnaire scores, with 50% improvement defined as significant improvement.

Results

Of the eight participants who completed the project, six were male (75%) and two female (25%) with a mean age of 61 years (range = 37–71 years). Seventy-five percent of participants had a history of end-stage renal disease and hypertension, 50% had a history of type II Diabetic Mellitus, and 25% had a history of peripheral artery disease. Arteriovenous fistula creation was the most common same-day vascular procedure performed, accounting for 75% of all procedures followed by lower extremities angioplasty.

All eight participants completed the Medication Adherence Questionnaire (MAQ) and PROMIS Global Health questionnaire pre-operatively and again during telephone follow-up calls at 3- 7- and 14 days. The pre-operative MAQ scores ranged from 3.75 to 8, with a mean score of

6.12. Twenty-five percent of participants were found to have high medication adherence, 37.5 % were considered to have medium medication adherence, and 37.5% were regarded as having low adherence. At the 2-week follow-up, 50 % of participants showed improvement in their MAQ scores (see Figure 1). Thirty-seven percent of participants had scores that showed high medication adherence, 50% had scores that showed medium medication adherence, and only 12.5 % of participants had scores that indicated low medication adherence. Participants' responses revealed the most common reason for non-adherence was forgetfulness, followed by inconvenience associated with taking medication every day.

The PROMIS Global Health Questionnaire assesses self-reported physical and mental health. The pre-operative PROMIS Global Physical Health T-scores ranged from 26.7 to 39.8, with a mean T-score of 36.0. Among the 8 participants, 62.5% scored between >35.0 and < 42.0, which indicated fair physical health, and 37.5% scored < 35.0, which suggested poor physical health. However, after 2 weeks of follow-up, 50% of participants increased their PROMIS Global Health T-score, with the highest T-score increasing to 42.3 (see Figure 2). Good, fair, and poor physical health were reported in 12.5%, 75%, and 12.5% of participants.

The PROMIS Global Mental Health pre-operative T-scores ranged from 33.8 to 48.3, with a mean score of 41.0. Sixty-two percent of participants scored > 40.0 and < 50.0, which suggested good mental health, and 37.5 % scored between < 40 and >30, which indicated fair mental health. At the 2-week follow-up, 25% of participants showed improvement in their T-scores, with T-scores ranging from 36.3 to 48.3 (see Figure 3).

Discussion

The purpose of this evidence-based practice project was to implement a telephone follow-up program to improve medication adherence and quality of life among same-day vascular

surgery patients. Most patients who undergo same-day vascular surgery are discharged home after only a few hours in the recovery room (Woods et al., 2019). The transition from hospital to home can be a stressful time for patients because it often involves the communication of complex information regarding diagnosis, discharge instruction, new medication use, and follow-up care at a time when patients are easily distracted due to anesthesia effect, anxiety, and discomfort leading to difficulties in perceiving and processing information (Van Loon-van Gaalen et al., 2021; Woods et al., 2019).

Post-discharge telephone follow-up is a simple intervention that allows continuity of care and provides the opportunity to reinforce and clarify patient understating of discharge care instructions (Schuller et al., 2015). Furthermore, post-discharge telephone follow-up has been shown to improve patient health outcomes and medication adherence, increase patient satisfaction, and reduce unplanned readmissions (Arad et al., 2021; Woods et al., 2019). The results of this project showed NP led telephone follow-up could improve patients' medication adherence and quality of life. At the 2-week follow-up, 50% of participants showed improvement in their MAQ score and PROMIS Global Physical Health T-score. In addition, 25% of participants increased their PROMIS Global Mental Health T-score at 2 weeks follow-up.

Implication for Practice

Post-discharge emergency department (ED) visits and hospital readmissions are still a challenge to efficient quality care. A NP led post-discharge telephone follow-up is a simple and cost-effective intervention that increases patient medication adherence and improves patient outcomes and quality of life. By reinforcing discharge instructions and providing care and reassurance during telephone follow-up, the NP can prevent unnecessary ED return visits and

hospital readmissions due to misunderstanding of information, lack of support, or anxiety (Van Loon-van Gaalen et al., 2021).

Limitations

The number of participants in this pilot project was small and therefore, may not accurately reflect potential outcomes if this project was incorporated with a more significant number of same-day vascular surgery patients. A sizable number of participants declined to participate and dropped out during follow-up. Additionally, a substantial number of participants were excluded from the project due to a language barrier. One solution for this limitation could be to use bilingual staff to administer surveys and conduct follow-ups with non-English speaking participants.

Another limitation was the short duration of the project and the lack of long-term follow-up. Participants showed improvement in their medication adherence and physical and mental health assessment during the last follow-up call; therefore, a 2-week follow-up period was not sufficient to monitor the long-term effects of the intervention. Extending the follow-up period to one month after the procedure could have resulted in a more accurate outcome evaluation.

Lastly, 75% of participants had a history of end-stage renal disease and needed dialysis 3 times a week, making it difficult to schedule the follow-up calls. Closer collaboration with the dialysis center and outpatient vascular clinic might have improved the follow-up process and prevented participants' loss during follow-up.

Conclusion

Hospital readmissions and unplanned post-discharge ED visits are economically costly and associated with increased adverse patient outcomes. This project demonstrated that a NP led post-discharge telephone follow-up program is a simple, inexpensive, and effective intervention

that can enhance patients' transition home, resulting in improved patient outcomes, patient satisfaction, self-management, and decreased unplanned ED visits.

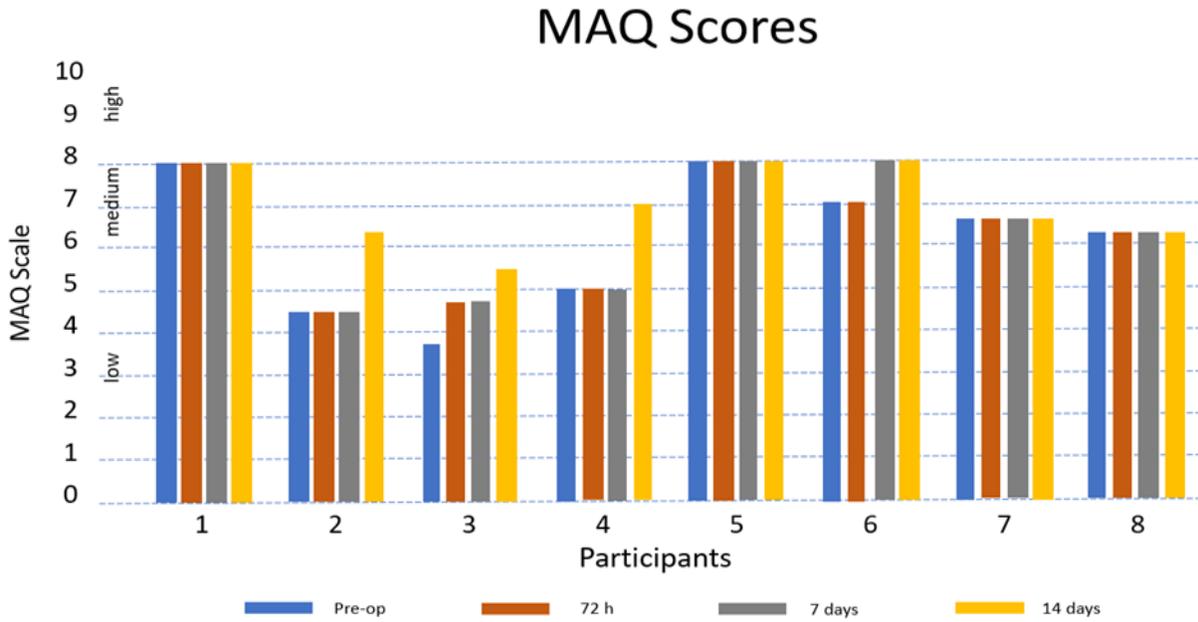
References

- Alltucker, K. (2019, June 4). *USA Today*: 'Really astonishing': Average cost of hospital ER visit surges 176% in a decade, report says. HCCI. Retrieved March 10, 2021, from <https://healthcostinstitute.org/on-the-new/usa-day>
- Arad, M., Goli, R., Parizad, N., Vahabzadeh, D., & Baghaei, R. (2021). Do the patient education program and nurse-led telephone follow-up improve treatment adherence in hemodialysis patients? A randomized controlled trial. *BMC Nephrology*, 22(1), 119. <https://doi.org/10.1186/s12882-021-02319-9>
- Berrios-Torres, S. I., Umscheid, C. A., & Bratzler, D. W. (2017, August 1). *Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017*. Validate user. Retrieved April 28, 2022, from <https://jamanetwork.com/journals/jamasurgery/fullarticle/2623725>
- Clari, M., Frigerio, S., Ricceri, F., Pici, A., Alvaro, R., & Dimonte, V. (2015). Follow-up telephone calls to patients discharged after undergoing orthopaedic surgery: Double-blind, randomized controlled trial of efficacy. *Journal of Clinical Nursing*, 24(19–20), 2736–2744. <https://doi.org/10.1111/jocn.12795>
- Hays, R. D., Spritzer, K. L., Thompson, W. W., & Cella, D. (2015). U.S. General Population Estimate for "Excellent" to "Poor" Self-Rated Health Item. *Journal of General Internal Medicine*, 30(10), 1511–1516. <https://doi.org/10.1007/s11606-015-3290-x>
- Horstman, M. J., Mills, W. L., Herman, L. I., Cai, C., Shelton, G., Qdaisat, T., Berger, D.H., & Naik, A. D. (2017). Patient experience with discharge instructions in post-discharge recovery: A qualitative study. *BMJ Open*, 7(2). <https://doi.org/10.1136/bmjopen-2016-014842>

- Hospital Care Data. (2021). *Readmission rates at University of California San Diego Medical Center*. Retrieved March 10, 2021, from <https://hospitalcaredata.com/facility/university-california-san-diego-medical-center-san-diego-ca-92103/readmission-rates>
- Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing & healthcare: a guide to best practice*(third). Wolters Kluwer.
- Morisky, D. E., Ang, A., Krousel-Wood, M., & Ward, H. J. (2008). Predictive validity of a medication adherence measure in an outpatient setting. *Journal of Clinical Hypertension (Greenwich, Conn.)*, *10*(5), 348–354. <https://doi.org/10.1111/j.1751-7176.2008.07572.x>
- Schuller, K. A., Lin, S. H., Gamm, L. D., & Edwardson, N. (2015). Discharge phone calls: A technique to improve patient care during the transition from hospital to home. *Journal for Healthcare Quality*, *37*(3), 163–172. <https://doi.org/10.1111/jhq.12051>
- Van Loon-van Gaalen, M., Van der Linden, M. C., Gussekloo, J., & Van der Mast, R. C. (2021). Telephone follow-up to reduce unplanned hospital returns for older emergency department patients: A randomized trial. *Journal of the American Geriatrics Society*, *69*(11), 3157–3166. <https://doi.org/10.1111/jgs.17336>
- Woods, C. E., Jones, R., O'Shea, E., Grist, E., Wiggers, J., & Usher, K. (2019). Nurse-led post-discharge telephone follow-up calls: A mixed study systematic review. *Journal of Clinical Nursing*, *28*(19-20), 3386–3399. <https://doi.org/10.1111/jocn.14951>

Figure 1

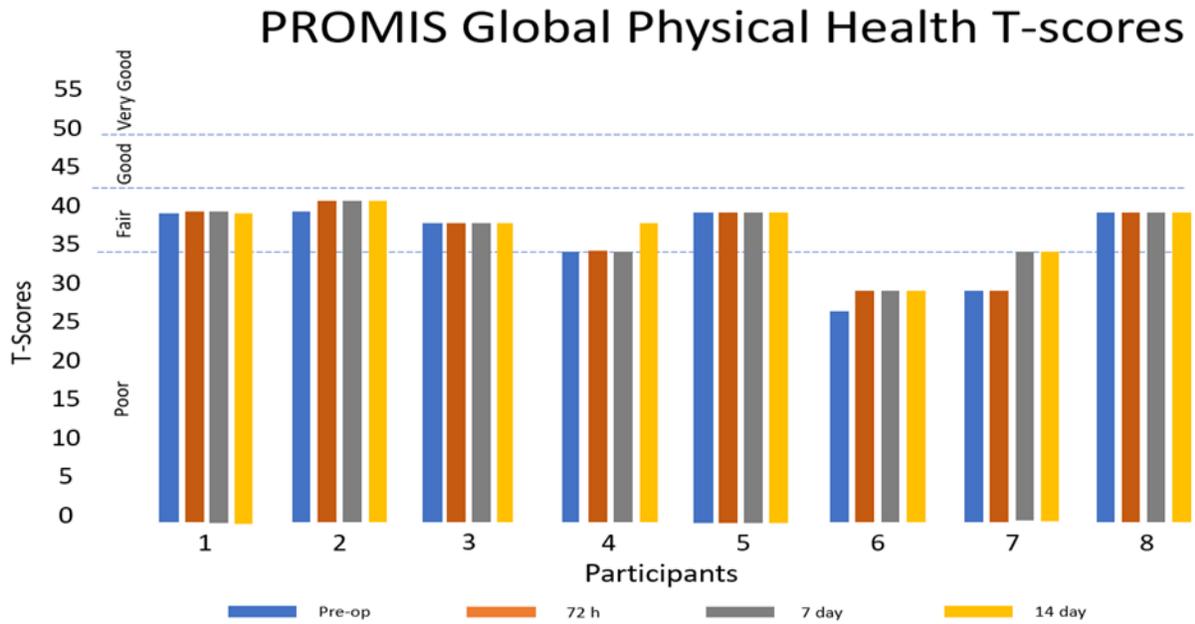
Medication Adherence Questionnaire



Note. Participants' Medication Adherence Questionnaire (MAQ) scores pre-op and at 3-, 7-, and 14-days after the procedure.

Figure 2

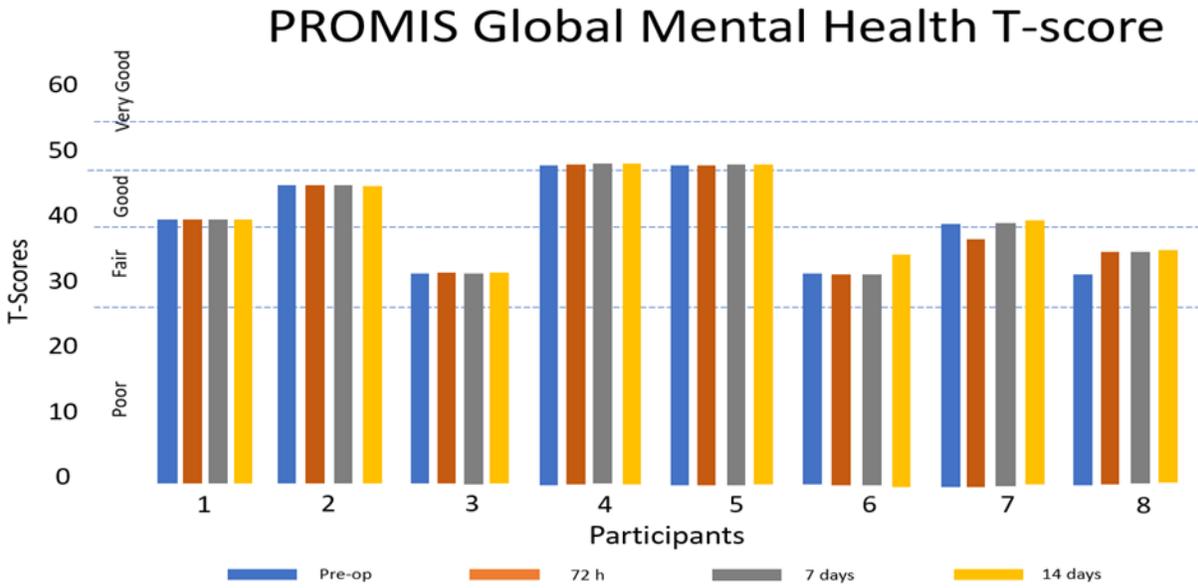
PROMIS Global Physical Health T-scores



Note: This figure shows the PROMIS Global Physical Health T- scores pre-op for all eight participants. The scores include 3-, 7-, and 14-days after the procedure.

Figure 3

PROMIS Global Mental Health T-scores



Note: This figure shows the PROMIS Global Mental Health T- scores pre-op and for all eight participants at 3-, 7-, and 14-days after the procedure.