ORH Enterprise-Wide Initiative (EWI) Transitions Nurse Program End-of-Year Evaluation

EXECUTIVE SUMMARY

In its first expansion year as an ORH EWI, the Transitions Nurse Program trained seven nurses at 5 VA facilities and enrolled 544 (as of close of FY'17) and 843 Veterans (as of close of calendar year 2017). While analysis of utilization outcomes will be completed in January, our implementation evaluation indicates the program improved essential transitions of care processes, was perceived favorably by VA employees and Veterans, and was implemented successfully with high fidelity at all sites. We attribute this initial success to a rigorous approach to dissemination and implementation of the program, using implementation science theories and frameworks to inform our pre-implementation site assessments, tools for iteratively improving the program's implementation and effectiveness, and evaluation. For example, we used the PRISM framework to inform our initial visits to each of our expansion sites, conducting key informant interviews, constructing high-quality process maps of the current state, and identifying key barriers and facilitators to successful implementation. We fed these data back to sites to help them adjust their approach. We created an entire simulation-based nurse training program using standardized patients at the University of Colorado's CAPE training center which received enthusiastic support from the nurses and resulted in the intervention being delivered with high fidelity across all sites. We used tools from implementation science – such as creating a community of practice among the nurses, using audit and feedback, and engaging each site's leadership – to maximize the potential effectiveness and implementation of the program. Finally, we conducted a rigorous evaluation of our first-year progress using the RE-AIM framework from implementation science. While our primary goal is always to improve the outcomes of rural Veterans after hospitalization, a second important goal is also contributing to the science of disseminating promising interventions. We hope these lessons will assist the Office of Rural Health and the Office of Nursing Services to maximize the potential of all promising interventions – not just TNP- that these Offices would like to successfully spread nationwide.

Each site has presented their own unique challenges to implementation, reporting, and engaging with program office, but we have worked with sites to avoid problems that lead to them being unable to enroll Veterans in the program. Nurse hiring and adequate staffing continues to present the biggest programmatic challenges for TNP.

Site Selection and Pre-implementation Assessment

TNP expanded to one large VA facility in each of the five new proposed VA regions: VA Puget Sound HCS (Seattle VAMC); Iowa City VA HCS; Malcolm Randall VAMC, North Florida South Georgia HCS (Gainesville); VA Pittsburgh HCS; and VA Salt Lake City HCS. These sites each had large rural Veteran populations hospitalized at these main centers, who returned to rural clinics for ongoing care.

We assessed sites using both quantitative and qualitative approaches, informed by the PRISM framework.[1] Quantitative administrative data from multiple VA sources helped inform site selection and helped to identify organizational factors that may affect implementation. We used the PACT demonstration lab's PI[2] index, patient satisfaction (SHEP) scores, IPEC data, All Employee Survey results by site, and SAIL data to create an initial portrait of each site. We then conducted fourteen site visits to five VA Medical Centers and 9 VA Community-Based Outpatient Clinics to qualitatively capture potential barriers and facilitators. Our tools for doing so were informed by PRISM and by our quantitative data work, as well as one preliminary site visit to a site not enrolled in the first year to test our tools and processes.

We focused our in-person qualitative data collection using four tools: first, key informant interviews with 44 different frontline, administrative, and leadership staff; second, contextual inquiry and observation at each tertiary site and one or two associated PACT teams to understand culture and barriers; third, Lean process mapping at each tertiary site and associated sample of spoke sites to help understand the current transitional care process for rural Veterans; and fourth, a Brainwriting group pre-mortem activity to help to define potential barriers and facilitators. This multidimensional assessment was used to rapidly assess local context and was shared with the nurse and site champion both on the site visit and at nurse training to help plan strategies to adapt to the local context.

Data management

We designed and created a secure database that accommodates two data sources: first, input from our team in Denver with details of ongoing implementation activities, and second, direct inputs from the Transitions Nurses at each site as they enroll Veterans in the program. The database is located on a secure instance of SQL Server located behind the VA firewall. Group-based access control ensures that users can view only the tables appropriate to their role, while row-level security gives Transitions Nurses access to only those records pertaining to their location. We can share cumulative enrollment and other data with the nurse and champion at each site using a "dashboard" updated weekly, and in FY18 will also include utilization outcome data on a quarterly basis using Statistical Process Control charts.

TN training

We conducted specialized Transition Nurse training in collaboration with the CAPE (Center for Advanced Professional Excellence) at University of Colorado School of Medicine. TNP Office of Nursing Service leadership, Christine Engstrom, RN, PhD, provided invaluable support to the TNs at training.

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[1] Feldstein AC, Glasgow RE. A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice. Joint Commission Journal on Quality and Patient Safety. 2008;34(4):228–43. doi:10.1016/S1553-7250(08)34030-6.

Transition Nurses participated in an intensive two-day curriculum, including multiple live patient simulations with real-time feedback, to acquire skills in coordination of care, communication, and motivational interviewing. During this time, the clinical Champions received training in quality improvement and implementation science principles that would help them adapt the intervention and successfully lead change locally. Transition Nurses additionally completed 26.5 hours of Care Coordination and Transition Management online training modules through the AAACN (American Academy of Ambulatory Care Nursing) prior to the two-day intensive training. Initial reviews of the training were extremely positive, with TN post-training surveys including statements such as: "I loved practicing my skills (communication), [and] I will continue to work on motivational interviewing," and that they enjoy "feeling like I am part of a bigger project w/multiple impacts [including] connection with a team." We conducted site visits at the end of our first year to each expansion site to observe the RN enrolling patients and found this training led to the intervention being delivered with high fidelity.

Year 1 evaluation

Our initial evaluation was guided by the RE-AIM implementation science framework, which suggests evaluating in five domains: Reach, Effectiveness, Adoption, Implementation, and Maintenance.

REACH

Reach is a measurement of how many potentially eligible Veterans were enrolled in the program. This was challenging to assess because we allowed each site to define their own high-need rural population differently. Thus, we used administrative data to estimate the pool of potentially eligible Veterans, acknowledging this could be an over- or under-estimate. The purpose in measuring Reach is to allow the nurse and champion at each site to evaluate how well they are capturing potentially eligible patients, and to modify their processes if they are having difficulty enrolling these patients. We employed two principal strategies to help each site reach the target population:

- ***Audit and feedback*** – weekly updates to the Transitions Nurses about the enrollment numbers and on-going feedback about strategies to increase the enrollment.
- ***Facilitation*** – on-going external facilitation by the Denver team to inform strategies to increase the enrollment.

Thus, many participating sites modified their initial enrollment criteria to increase the number of eligible patients for enrollment. Specific examples include expanding the enrollment criteria to include to urban CBOCs who serve rural-residing Veterans, and expanding to include additional services at the VAMCs, such as patients admitted to surgery service and for observation.

Between May to September, we estimate that an average of 38% (76/199) of eligible Veterans were enrolled in the rural Transition Program at the time of discharge across all six intervention sites. Reach varied across the six sites, from 7% (123/1695) to 52% (58/111). These numbers can be misleading: low reach may not mean that the nurse is having difficulty enrolling patients. In fact, at our site with the lowest reach, it was because there are far too many eligible patients for a single nurse to feasibly enroll.

This site enrolled the most Veterans of any expansion site. Thus, our guidance for this site might be to consider hiring additional Transitions Nurses.

For "high-touch" interventions like the rural Transitions Nurse Program, a lower reach is to be expected. The intervention is carried out by one Transitions Nurse, whom we can expect to enroll a maximum of 25-30 patients per month due to FTE, regardless of eligible population counts.

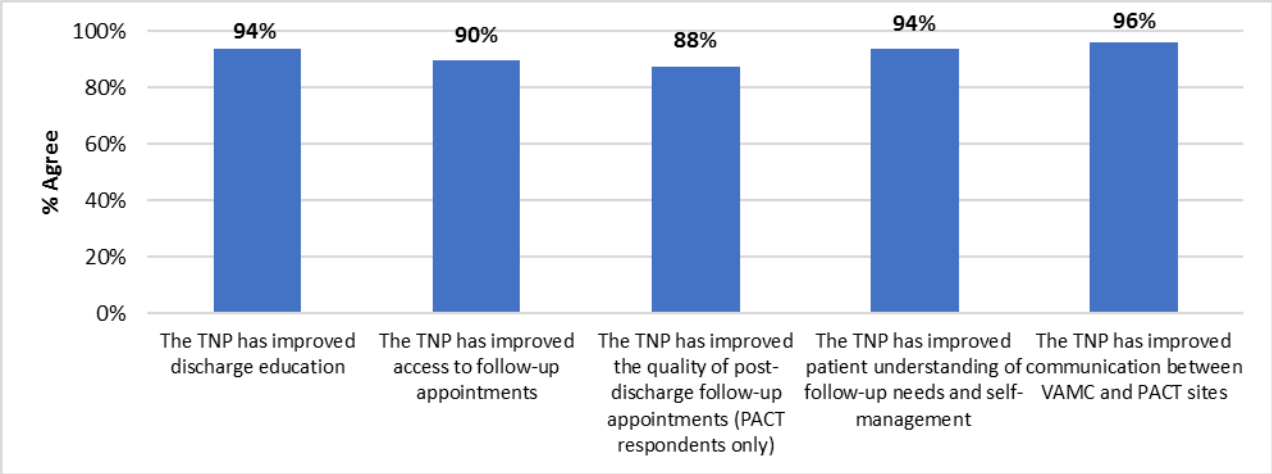
EFFECTIVENESS

We have chosen to measure effectiveness initially through one process measure (how often the rural Veteran completes a post-discharge appointment within 14 days of discharge) and one utilization outcome measure (rates of Emergency Department visits and hospital readmission within 30 days of discharge). However, since this is not a randomized, controlled trial, measuring the effect of the program is more complex. We plan to use a "difference in differences" interrupted time series analysis, comparing VAs who implemented the program with similar VAs who did not. This requires measuring and adjusting for significant differences in both measurable VA and patient characteristics across these sites. In addition, since the data entered by the Transitions Nurses is occasionally imperfect, we cross-check with administrative data sources to verify the enrolled population. We are working with our TNs to iteratively train on research and data fidelity to ensure data quality control and automation of data cleaning moving forward. We will have effectiveness outcomes by the end of January, and will start reporting these data to our expansion sites in the form of Statistical Process Control (SPC) charts, used in Quality Improvement (QI) to measure whether significant within-site changes have occurred. This will allow sites to iteratively modify their intervention or implementation processes and measure the effect of these changes on outcomes.

We also wished to evaluate the satisfaction of the VA providers and patients who had experienced this program. Staff satisfaction surveys were administered between October 17th to November 1st. Staff across all sites reported high satisfaction with the TNP. [2] Ninety-eight percent (50/51) of participants felt that the TNP fits well with VA priorities). While 40% (19/48) of staff felt that the TNP competes with other programs, half of the sites reporting overlap (5/10) have- through audit and feedback -iteratively adapted in-services and communication to help change staff perceptions of the program since the delivery of this survey (**Figure 1)**.

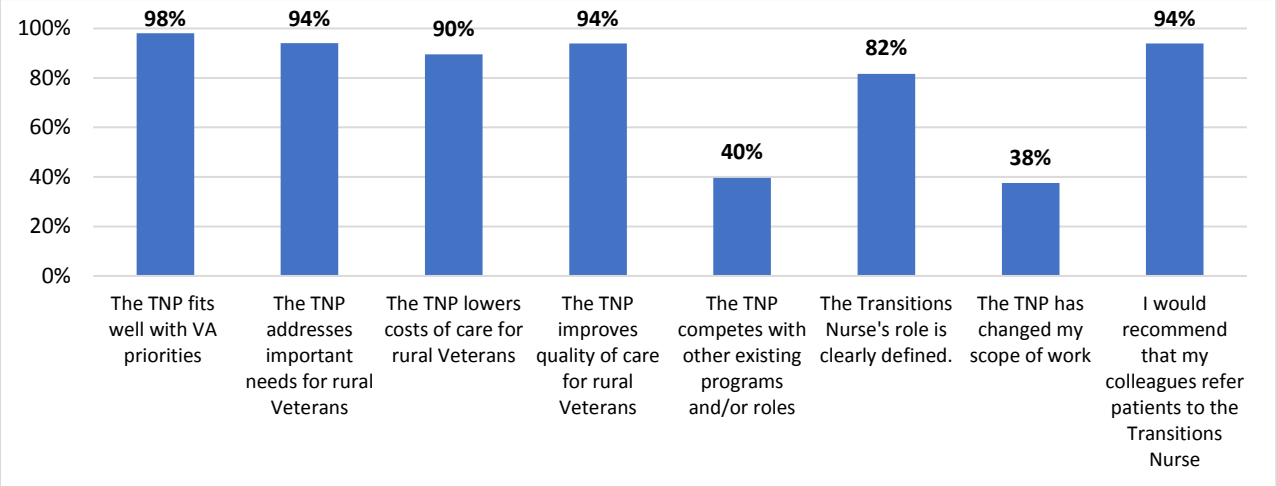
[2] Fifty-one of 72 participants completed the survey with participation varying by site (range: 5-11) and by question (range: 8-51). Participants included social workers, PACT nurses, pharmacists, leadership, attending physicians, and inpatient nurses.

Figure 1: Staff Satisfaction with the TNP



Across all sites, staff surveyed felt the TNP had had a positive impact on transitional care for rural Veterans (**Figure 2**). Ninety percent (43/48) of staff reported that the TNP has improved access to follow-up appointments

Figure 2: Perceived Impact of the TNP on Transitional Care



We conducted a phone survey with 22 enrolled Veterans who completed all components of the TNP and had been discharged from the hospital within the past 14-20 days across all five sites.

Veterans reported high satisfaction with the rural Transitions Nurse Program. Most respondents felt that hospital staff ensured they would have the help they needed at home, took their preferences into account, and provided written information about symptoms (**Table 1, Appendix**).

They also received follow-up appointment coordination, a post-discharge follow-up call and coordination with the VA primary care provider through the TNP (**Table 2, Appendix**).

When asked to elaborate on their answers, Veterans described: "*...she [the Transitions Nurse] filled me in on how if anytime I needed to call back or call back...any barriers, just call her… I was impressed I thought it was nice.*"

- *"[The interaction was] Simple, easily, [and] understandable."*
- *"I had to go back up [to the hospital] about a week after discharge and I would have had to go back earlier but she [the TN] coordinated with the department so that I wouldn't have to go back more than once, because it's about 3 hours away."*

ADOPTION

Of each site approached to implement the TNP intervention in Y1, all have seen successful adoption of the program. The principal investigator, Dr. Robert Burke, met with site leadership on each site visit with Y1 sites to help ensure stakeholder engagement and program uptake and support, and all site and leadership felt the program was valuable and aligned with VA priorities of expanding access. Through the first year, site Champions had monthly calls with PI Dr. Burke, and TNs were engaged in weekly calls with the Implementation team (later reduced to bi-weekly in Q4) to troubleshoot intervention and adoption issues. Additionally, the TNP PR campaign has included flyers, signs, color pamphlets, and a video short for Transition Nurses and champions to use for distribution to help promote uptake of the program.

Of the 5 sites, there were up to 10 unique roles per site that referred a Veteran to the Transitions Nurse for enrollment, indicating a wide uptake in adoption of TN across services. The Transition Nurses and site champions continue to employ strategies to ensure adoption. These strategies include in-services with various clinical and multidisciplinary teams, as well as attending multi-disciplinary rounds to introduce the program to make the role of the Transitions Nurse visible, and to educate about the role in the discharge and post-discharge care coordination processes.

IMPLEMENTATION

To measure implementation, fidelity and adaptations were tracked using qualitative observations and interviews, as well as an audit trail. We conducted multiple assessments at each site to track adherence to the program components, the Transitions Nurses' competency in delivering the program components, and to assess how each site has modified its discharge and care coordination processes in response to the program.

Through our real-time adaptation tracking and midline site visits, we observed that at all sites, all four core components of the TNP program have maintained fidelity, and are being delivered as intended. We encouraged sites to adapt the delivery of these four core components to their local circumstances, to improve adoption by increasing fit with their local context. In interviews with the site champions and

nurses, we found 18 distinct adaptations made to tailor the program to their local contexts and processes. Most modifications (12/18) were made to fine-tune the eligibility criteria to meet the enrollment goals; specific examples included expanding the eligibility to patients from other teams and services, geographic areas, and types of care services received. These adaptations were made due to receiving regular audit and feedback on the enrollment data, the local teams' experience with working with patient populations, and practical considerations, such as limiting the scope of the TN role to avoid the burnout. The short-term impact of these adaptations resulted in an increase in patients enrolled in the TNP across all sites.

The process of collecting data on implementation barriers and facilitators is ongoing. We have identified staffing issues as a potential barrier to the TNP implementation. Specifically, the delays in the TN hiring process at one of the sites delayed the program roll-out and impacted the overall enrollment goals. Cross-training with other staff for coverage while a TN is on leave is one option to maintain consistent enrollment, and we are considering ways to maintain enrollment and program sustainability without further FTE demands. Additionally, we identified role duplication as a potential barrier. This was also an emergent theme in out pre-implementation assessment. To overcome role duplication, we encouraged continued in-services training and education to advertise the TNP to clinical staff while clarifying the TN role. Additionally, some sites have developed SOPs to further standardize their role within the sites.

MAINTENANCE

Maintenance is measured by whether the program continues after external support has ceased; we plan to start implementing strategies to encourage sites to support the program in the second operational year for each site.

DISSEMINATION

The TNP team has begun initiating our PR campaign to help disseminate information about the program among the VA and community, and to contribute generalizable knowledge to the field of Implementation Science. We have developed a webpage devoted to the TNP project on the Denver-Seattle COIN intranet website, developed a Twitter presence to broadcast program information and spread research accomplishments, and are in the planning stage of creating a training tools to produce scale-able, online training content to help TNs conduct their own Pre-implementation Assessment, based on our qualitative tools used for pre-implementation data collection in Year 1. We have presented at multiple national meetings and have a publication in Implementation Science, with several other manuscripts underway.

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VA

U.S. Department of Veterans Affairs

Table 1: Veteran Satisfaction with the Hospital Discharge

Question	Percent "yes"	Percent "no"	Percent "I don't know"
During this hospital stay, did doctors, nurses, or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?	91% (20/22)	9% (2/22)	n/a
During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?	86% (19/22)	14% (3/22)	n/a
Did the hospital staff take your preferences and those of your family or caregiver into account in deciding what your health care needs would be when you left the hospital?	82% (18/22)	0% (0/22)	18% (4/22)
When you left the hospital, did you clearly understand what you needed to do to take care of yourself at home?	100% (22/22)	0% (0/22)	0% (0/22)
When you left the hospital, did you clearly understand the purpose of taking each of your medications?	100% (22/22)	0% (0/22)	0% (0/22)

Table 2: Veteran Satisfaction with the Transition Nurse Program

Question	Percent "yes"	Percent "no"	Percent "I don't know"
Did a rural Transitions Nurse come to see you before you left the hospital and teach you about how to take care of yourself at home? ***(If "no" or "I don't remember", skip the following questions)***	77% (17/22)	5% (1/22)	18% (4/22)
Was your visit with the Transition Nurse helpful?	88% (15/17)	0% (0/17)	12% (2/17)
Did your visit with the Transitions Nurse address questions and concerns you had about going home?	65% (11/17)	12% (2/17)	24% (4/17)
Did the Transition Nurse help you schedule a follow up appointment with your local VA doctor?	82% (14/17)	12% (2/17)	6% (1/17)
Did that same Transition Nurse call you at home to see how you were doing ***(If "no" or "I don't remember", skip the following questions)***	86% (19/22)	0% (0/22)	14% (3/22)
Was your call with the Transition Nurse helpful?	79% (15/19)	5% (1/19)	11% (2/19)
Did this call address any questions you had about your hospitalization or how to take care of yourself at home?	49% (8/19)	21% (4/19)	37% (7/19)
Have you had an appointment with your local VA doctor to follow-up on your recent hospitalization? ***(If "no" or "I don't remember", skip the following questions)***	68% (15/22)	32% (7/22)	0% (0/22)

	During your appointment, did the clinic staff understand why you were in the hospital and what you were supposed to do when you left the hospital?	87% (13/15)	7% (1/15)	7% (1/15)

Figure 1: Staff Quotes on the Transition Nurse Program

Accolades for the TNP	Areas for Improvement
"I just feel this is a huge asset for us and our Veterans and would like to see it continue." *"TNP works appropriately and successfully as an advocate for patient needs"* *"As a social worker. It is very nice to defer questions to the TNP. It is hard to know all the different rural resources on top of my other job and it is a perfect role for the TNP to provide information and bridge the gap between hospitalization and home."* *"The idea that the veteran leaves the hospital with a full understanding about his care at home, has all of the equipment needed and who to call in the event he needs assistance or a follow up appointment is wonderful, and I can't wait until we share this program with all of veterans."*	*"Perception is that the TNP program would be better served as an RN case manager, current roles are poorly defined and the provider teams are not sure how to interact with them"* *"At times seems like TNP is overlapping/competing with social work … Has led to confusion on who to contact and seems like double work may be occurring."*

Publications:

- We published a study protocol in the Journal Implementation Science in October 2017. The protocol describes our novel approach to pre-implementation formative assessments at intervention sites. We use the PRISM implementation framework to assess contextual factors that may impact the uptake of the intervention. We also describe our methods for evaluating the success of both our implementation strategy and our intervention. We detail how we use ongoing audit and feedback coupled with internal and external facilitation to help intervention sites continually improve the reach and effectiveness of the intervention. (Leonard, C., Lawrence, E., McCreight, M., Lippmann, B., Kelley, L., Mayberry, A. et al. (2017). *Implementation and dissemination of a transition of care program for rural veterans: a controlled before and after study.* Implementation Science, 12, 123.)

Posters:

- Emily Lawrence, MPH, presented the poster *Using a novel pre-implementation assessment informed by the Practical, Robust, Implementation and Sustainability Model to enhance implementation success*, at the 2017 10th Annual Academy Health Conference on the Science of Dissemination and Implementation in Health, Washington DC, December 5, 2017.
- Lynette Kelley, RN, and Ashlea Mayberry, BS, at the 29th Annual Rocky Mountain Inter-Professional Research & Evidence-Based Practice Symposium, Improving care coordination for rural Veterans: the expansion of the Transitions Nurse Program (TNP), on April 6 & 7, 2017.
- Lynette Kelley, RN, Denver VA ECHCS Research Day: Improving transitional care for rural Veterans: the expansion of the Transitions Nurse Program (TNP), May 26, 2017.

Presentations:

- Heather Gilmartin, NP, PhD, gave a twenty minute presentation in the "Stakeholder Engagement & Partnership Building in D&I Science" session, Dec. 4, 2017, entitled "*How will the rural transitions nurse program fail?" a Brainwriting, pre-mortem exercise to identify barriers to implementation,"* submitted to the 2017 10th Annual Academy Health Conference on the Science of Dissemination and Implementation in Health.
- 145th American Public Health Association Annual Meeting and Expo; November 4-8, 2017; Atlanta, GA. Abstract titled, *Expansion of the VA Transitions Nurse Program: Results of the Pre-implementation Assessment*, was submitted for the presentation. The abstract was selected for an oral presentation and presented at the meeting.
- Lynette Kelley, RN, Scan- ECHO Grand Rounds: Department of Veteran Affairs, the Transitions Nurse Program (TNP), May 26, 2017.

- Lynette Kelley, RN, Denver VA ECHCS Research Day: the Transitions Nurse Program (TNP), May 25, 2017.
- Lynette Kelley, NP, and Ashlea Mayberry, BS, led an abstract and podium presentation at the 30th Annual Rocky Mountain Inter-Professional Research & Evidence-Based Practice Symposium, *Improving care coordination for rural Veterans: dissemination and implementation of the Transitions Nurse Program*, on April 5 & 6, 2018.