TRANSFER BUNDLE USE IN THE INTENSIVE CARE UNIT: A QUALITY IMPROVEMENT PROJECT IN A NEUROSURGICAL INTENSIVE CARE UNIT

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A DNP Project Manuscript
Submitted in Partial Fulfillment of the Requirements for the
Doctor of Nursing Practice Degree

University of Maryland School of Nursing
May 2019

Abstract

Background: Transfer out of the intensive care unit (ICU) is known to be one of the most stressful times in a patient's hospital course. "Transfer anxiety" or "relocation stress" is affected by factors including: higher nurse to patient ratios outside of the ICU, decreased monitoring and surveillance, and poor planning and preparation for the transfer itself. A 14-bed neurosurgical ICU at a large, urban, academic hospital had no transfer process in place. An informational transfer bundle was implemented over 13-weeks as part of a quality improvement (QI) project.

Methods: Data were collected using a pre and post-test survey, a transfer checklist, and the Systems Usability Scale survey tool. Descriptive data analysis was performed at the conclusion of the 13-week QI project.

Results: Nurses perceptions of having an appropriate transfer process in place, and patients and families viewing transfer in a positive light increased post-implementation, however, notification of transfer itself was still low. The transfer brochure use was viewed favorably nurses, with greater than 90% reporting "agree" or "strongly agree" that its use helped in the transfer process. Patients/families reported increased comfort with transfer process through feedback during dissemination of the brochure. The Checklist showed that 29% of respondents had less than 24-hour notice of transfer and 62% had no family present at the time of brochure review. The goal of 20 completed checklists was met with 20 total transfers completed with checklist, although 5 appropriate transfers were missed.

Conclusions: There is a need for a more formal transfer process and timely notification of impending transfer. Nursing, support staff, and management viewed the project favorably, stating the brochure helped patients and their families feel more prepared for transfer. Sustainability of the project will include use of the brochure on at least 2 other ICU's and addition to current ICU checklist used during rounds. Overall, the project helped facilitate smoother transfer process for patient/family.

Transfer Bundle Use in the Intensive Care Unit

Background & Significance of the Problem

Admission to an Intensive Care Unit (ICU) is an extremely stressful time for patients and their family members. Critical illness and fear of potential death are very real stressors upon admission to the ICU. According to Gustad, Chaboyer, & Wallis, (2008), while the ICU environment may initially cause fright, eventually a sense of safety and comfort is achieved. Transfer out of the ICU has been found to be one of the most stressful times in a patient's hospital course, as they often feel a sense of abandonment and fear upon losing the one-to-one care they have become accustomed to. "Transfer anxiety" or "relocation stress" are terms used to describe the impact of this phenomenon, which is affected by factors including: higher nurse to patient ratios on the step-down unit, decreased monitoring and surveillance, communication breakdown leading to lack of continuity of care, and poor planning and preparation for the transfer itself. Lack of preparation and planning is the most significant of these factors, leading to increased anxiety, and creating feelings of abandonment, helplessness, vulnerability, and unimportance. Taken together, this anxiety and fear create a view that the transfer itself is unsafe, and can lead to more reported physical symptoms, increased length of hospital stay, and readmissions to the ICU (Brooke, Hasan, Slark, & Sharma, 2012).

On a 14-bed Neurosurgical ICU at a large, urban, academic hospital, no formal transfer process existed. Patients from this ICU were often "bounced-back" solely based on inappropriate expectations of the step-down or ward unit. Family members often spoke with ICU managers complaining of lack of nursing availability, lack of

communication with the care team, and expressed a desire to return to the ICU. Additionally, with no formal transfer process in place, the nurses in the ICU received a great deal of pushback from the step-down unit, which created a lack of communication between the units. This lack of communication contributed to the feelings of stress and confusion experienced by patients and their families during the time of transfer.

Purpose Statement

The purpose of this Doctor of Nursing Practice project was to implement and evaluate the use of a transfer bundle on a 14-bed Neurosurgical ICU to decrease anxiety, increase communication, and increase overall patient satisfaction related to patient transfer. The intervention of a transfer bundle for this project included an informational pamphlet of transfer information (see Appendix A), a discussion of the information with the bedside nurse, and a checklist for ICU nurses to complete to ensure bundle compliance.

Potential Short and Long-Term Goals

Short-term goals for this project included: working with physician leaders to increase awareness of the project, information dissemination completed during shift change huddles, and to educate all unit nurses on the bundle and its implementation.

Long-term goals for this project focused on all appropriate patients receiving the transfer bundle. Additionally, long-term goals included: 100% of the nursing staff using the bundle; completion of the checklist; and performing staff huddles to ensure understanding of the bundle, barriers to its implementation, and success stories of its use. Nurses were surveyed on their perceptions of patient and family concerns and acceptance of the bundle. A potential goal of the project was to decrease the bounce-back to the ICU,

thereby reducing overall costs and decreasing length of stay. The ultimate long-term goal was sustainability of the project through implementation in other ICU's throughout the hospital.

Theoretical Framework Description

According to the U.S. Department of Health and Human Services, Health Resources and Services Administration, Quality Improvement (QI) models help teams focus on changes already proven effective, and provide guidance on various ways to approach change (U.S. Department of Health and Human Services, Human Resources and Services Administration (USDHHS, HRSA), 2011). The theoretical framework chosen to guide this DNP project is the FADE QI Model, which was selected based on its four components: Focus, Analyze, Develop, and Execute.

The "focus" step of the model defines the process, which is going to be improved (USDHHS, HRSA, 2011). In this stage, the problem statement is written, defined, and verified as a known problem facing the team. "Analyze" is the step where data is collected and analyzed, baseline patterns are determined, decisions are made as to what information is known/needs to be known, and influential factors are identified and explored (USDHHS, HRSA, 2011).

The "develop" step of the model uses the data collected in the previous two steps to develop action plans for the improvement, which include implementation, communication, and monitoring plans (USDHHS, HRSA, 2011). "Execute/evaluate" focuses on the implementation of the action plans, and the installation of ongoing monitoring processes to ensure the effectiveness of the project (USDHHS, HRSA, 2011).

Use of Theoretical Framework in this Project

In this project, transfer out of the ICU was the process of interest, or "focus" in the model. Data from the current transfer process was used during the "analyze" step in the model. Key stakeholders, influencers, and early adopters were identified, with their input used to determine the information contained within the tool. During the "develop" stage, the checklist for bedside nurses and the informational pamphlet for patients and their family members were created. Additionally, input from the key influencers and stakeholders allowed for more clear communication surrounding the use of the tool, between caregivers, the bedside nurses in the ICU and the step-down unit, the interdisciplinary team, and patients/family members. In the final stage "execute/evaluate", surveillance was accomplished through completion of the checklist/number of checklists completed, number of patients receiving the bundle during transfer (total number of patients transferred and total number who received the bundle), and ongoing feedback and education from the nursing staff in the ICU. The utilization of this quality improvement model ensured that the transfer bundle had successful outcomes, and patients and their family members understood that transfer out of the ICU is a positive step in the patient's recovery.

Transfer out of the ICU is known to cause many deleterious outcomes for patients when performed hastily without providing adequate information. This project sought to improve communication between nurses and all stakeholders with the use of a transfer bundle, with subsequent improvement in overall patient and family experience. The FADE QI Model created a framework for this project by: defining the process that needed improvement, analyzing and collecting data, developing and implementing action

plans for improvement, and evaluating the project to ensure success (USDHHS, HRSA, 2011).

Literature Review

The need for more robust transfer instructions when leaving the intensive care unit (ICU) for a step-down or ward unit was the focus of this literature review (Table 5). The review began broadly with evidence evaluating nursing perception of the use of a transfer tool. The discussion then narrowed to focus on current evidence related to structured informational interventions specifically geared towards transfer of care.

Analysis and Synthesis

In an intervention study by Mitchell and Courtney, (2005a), they found that nurses often felt under prepared for patient transfer. Their study aimed to alleviate this feeling by providing a structured transfer method from the perspective of the ICU nurse (Mitchell & Courtney, 2005a). The results showed 93.9% of the surveyed nurses considered transfer process “important” or “very important”. In a second study, Mitchell & Courtney (2005b) evaluated the utility of a brochure used in ICU transfers. After implementation of the intervention, with the brochure, 93.9% of the surveyed nurses considered this “important” or “very important”. Additionally, 87.8% of the nurses reported that the intervention was “quite helpful” or “very helpful” in creating a framework for discussion with patients/family members regarding transfer (Mitchell & Courtney, 2005a; Mitchell & Courtney, 2005b). Similarly, Berube, et al. (2014) found that a tailored transfer intervention was beneficial to patients and families as nurses noticed fewer manifestations of stress. There was also a shift in the nurse’s presentation of the transfer itself; prior to the use of the transfer tool, the often-rushed nature of a

transfer created a negative transition. However, they found that using the transfer tool created a positive transition step in the recovery of the patient. Paul, Hendry, & Cabrelli, (2004) found that staff reported improved communication with other hospital units and a more holistic view of care of patients with the implementation of a transfer tool, both leading to better transfer experiences. Ultimately, transfer tools were able to contribute to reduced length of stay, overall costs, and improved patient satisfaction with care.

Transfer out of the ICU is an important step in a patient's recovery. Reviewing the literature provides a clear picture that nurses in the ICU have favorable feelings towards the use of a transfer tool. Nurses have reported a more positive transfer experience, improved communication between units, and often less signs of stress with their patients and their family members with the use of a transfer tool.

The second aspect to this literature review focused specifically on informational interventions and their use in transfer out of the ICU. Mitchell & Courtney, (2005a), created an informational booklet/pamphlet containing information on the new unit and its policies/expectations, transfer plans for the patient, contact information of the unit leadership on the step-down unit, and support information for families which was found to decrease anxiety, and improve patient and family satisfaction with care. Bailey, Sabbagh, Loiselle, Boileau, & McVey (2010) found that information regarding policies, equipment, and personnel significantly improved patient and family member comprehension of diagnosis, prognosis, and treatment upon admission to the ICU. Additionally, the use of information was shown to decrease anxiety felt during this time. Lee, Oh, Sugh, & Seo (2016) found that by tailoring information based on disease characteristics and relocation needs, relocation stress levels significantly and

continuously decreased with the use of an informational intervention. Similarly, Brooke, et al., (2012), found that the use of information explaining the environment of the future ward could significantly reduce patient and family member transfer anxiety from the ICU setting when compared to standard of care. In the same study, written documentation was also found to significantly improve family members satisfaction with care. In the clinical practice guidelines for support of the family in the patient-centered ICU, Davidson, et al. (2007) stressed the importance of written information as a way to ease the transition out of the ICU. Paul, et al. (2004) found that the use of an information intervention enhanced conversations between patients/families and their care team. Taken together, this review shows the importance of informational interventions and their ability to reduce stress, increase knowledge and understanding of patient condition and transitions, increase communication, and have the potential to increase overall patient and family satisfaction with care.

In the literature, informational interventions (pamphlet or brochure) were shown to be the most successful in meeting the needs of patients and their families. A brochure allows patients and their family's time to read over the information presented and creates an opportunity to ask questions as they arise. Information in combination with one-to-one nursing explanation is successful in alleviating concerns that arise prior to transfer.

Methods

Transfer out of the intensive care unit (ICU) is known to be one of the most stressful times in a patient's hospital course. "Transfer anxiety" or "relocation stress" is affected by factors including: higher nurse to patient ratios outside of the ICU, decreased monitoring and surveillance, and poor planning and preparation for the transfer itself.

Lack of preparation and planning was found to be the most significant of these factors, often leading to anxiety, feelings of abandonment, helplessness, and vulnerability. Taken together, these factors cause patients and their families to view the transfer itself as unsafe, leading to increased report of physical symptoms, increased length of hospital stay, and readmissions to the ICU (Brooke, et al., 2012). Based on the evidence, the purpose of this QI project was to implement and evaluate the use of a transfer bundle to decrease anxiety, reduce ICU readmissions, and increase overall patient satisfaction related to patient transfer.

This QI project took place over a 13-week period. At the onset of the project, the DNP project leader recruited and educated a team of six volunteers to serve as project champions and a pre-test survey was given to all staff nurses on the unit to understand their current perceptions of the transfer process (Appendix B). Samples of the transfer brochure and checklist were placed on each nursing computer for review and understanding, and was part of the champion education process. At the end of the first week, via the unit-based newsletter, the project leader introduced the transfer brochure process to all staff. Staff education then occurred on the transfer bundle during change of shift huddles (both AM & PM). A poster was placed in the break room outlining the reasons for the transfer bundle and included a sample of the brochure and checklist, for education review. At the completion of education, the transfer brochure and checklist were completed on all appropriate patients. The project leader and/or a project champion were present during each shift to observe and support the practice change. At the conclusion of the project, the staff completed the post-test survey tool on nursing perceptions of the transfer brochure, which was developed by Mitchell & Courtney

(2004, see Appendix A), as well as the System Usability Scale (SUS) Usability tool survey (Appendix C).

Data collection was done via paper-completed checklists and survey collection. The project leader collected the checklists on a bi-weekly basis to understand the number of transfer brochures given. The project leader collected the pre-test and post-test surveys and performed descriptive data analysis in Excel. Descriptive statistics were used to measure and compare over time one and time two. Additionally, the SUS was analyzed for mean, standard deviation, frequency, and percentage of usability by the nursing staff.

A project description was submitted to the University Institutional Review Board (IRB) and received a Non-Human Subjects Research (NHSR) determination. Additional determination was obtained from the institutional IRB at the hospital where the project was implemented. The ultimate goal for sustainability of this project was for full implementation of the transfer bundle on the five other ICU's at this facility, comprising an additional 88 ICU beds.

Results

Report of Changes in Practice Made (Structure and Processes)

During the implementation of the project, a new focus on transfer and potential transfer was made. The focus enabled the staff to think about potential for transfer and the ability to start discussing the transition with their patients and families (when available). The staff became more engaged in the transfer process itself and were very engaged in reviewing the transfer brochure with all appropriate patients. The brochures were initially placed in a central location in the break room, but during the implementation, found that it was more beneficial to keep them with the unit clerk for

distribution. With this addition, unit clerks were able to ensure stock of the brochures, and hand them out to the bedside RN when they entered a patient for transfer.

Description of Results of Data Analysis and Outcomes

The data collected was pre-test/post-test comparison of nursing perceptions of the transfer process, a checklist completed with each brochure handed out, and a measure of usability of the tool itself at the conclusion of the project. There were 37 staff nurses and nursing managers who participated in the pre-test survey. All respondents were BSN prepared registered nurses working in the neurosurgical ICU. There were 22 staff nurses and nursing managers who participated in the post-test survey. The pre/post-test nursing perception survey measured the process for the intervention (Appendix B).

Key measures for this survey included nurses' perceptions on the current transfer process and whether they thought a transfer brochure would help with this patient population (Tables 1 & 2). To measure the practice change itself, a checklist (Appendix D, Table 3) was created that was completed for each transfer that occurred during the project. Twenty-one checklists were completed throughout the course of the project.

The second measure of the practice change was completed with the use of the SUS Usability tool (Appendix C, Table 4). This tool was completed at the same time as the post-implementation survey and had a total number of 22 respondents. All data collected was categorical, and analyzed using descriptive statistics.

Nurses perceptions of having an appropriate transfer process in place, and patients and families viewing transfer in a positive light increased post-implementation, however, notification of transfer itself was still low. The transfer brochure use was viewed favorably by nurses, with greater than 90% reporting "agree" or "strongly agree" that its

use helped in the transfer process. Patients/families reported increased comfort with transfer process through feedback during dissemination of the brochure. Checklist results were varied with 29% of respondents stated less than 24-hour notice of transfer and 62% had no family present at the time of brochure review. The goal of 20 completed checklists was met with 21 total transfers completed including the checklist, although 5 appropriate transfers were missed.

Observed Associations between Outcomes, Interventions, and Contextual Elements

The project leader was able to see a much more positive view of transfer from both the staff and the patient during project implementation. Ensuring that the brochures were delivered and reviewed with patients helped the staff understand the importance of the transition and the need for a more concrete transfer plan.

Unintended Consequences

The project leader rounded on the ICU with the director of the Patient and Family Centered ICU Care Committee. In the ICU, the bedside nurses currently initiate rounds with an ICU checklist to discuss pertinent issues in the plan of care. Discussions of adding a disposition plan (including potential date for transfer) to the ICU checklist was initiated. Using the bedside tool in this manner would allow for earlier initiation of the transfer process and give the patient and family more time to understand the goals of care and the transfer process itself.

Of note, the ICU where the project was implemented moved locations and then added 6 additional beds in a second ICU. The addition of the beds also brought vascular patients to the ICU, and all staff had to take a full day course on care for vascular

patients. The timing of this move, hiring of approximately 20 new staff nurses, and further education did create a barrier for this project, however, one that was overcome.

Discussion

In the ICU where the project was implemented, a move occurred during the first two weeks of implementation. The ICU moved from the second floor to the third floor, and then, added 6 additional beds in a second ICU. The additional beds added vascular patients to the ICU, a new specialty for this ICU, requiring education on care for vascular patients. At the same time, 20 new nurses were hired. The move, addition of beds, a new sub-specialty, and nurses created increased stress on the unit, but ended up helping with education as the unit was more receptive to change at this time.

The manager of the step-down unit reported less complaints related to "environmental" causes after the implementation of the transfer brochure, comparable with the evidence reviewed. In conversations, patients and family members felt more comfortable with the transfer and change in environment. Nursing perception of the project was favorable, with many nurses stating that they felt more confidence in the transfer process.

The goal of 20 checklists completed was met, however, 5 appropriate transfers were missed. There are many reasons for missed transfers, the new nursing staff, float pool nurses, and timing of transfer (often less than 6 hours) all contributed to the missed bundle completion.

There were articles included evidence review that were dated, however, they were used as they are viewed as landmark papers on this subject. When comparing the results of this project to the literature, many nurses surveyed stated they felt more prepared for

transfer, as did the nurses in the Berube, et al. (2014) study. Similarly, to Paul, et al. (2004), nurses on this unit reported improved communication with the step-down unit from use of the transfer brochure.

Conclusions

The project highlighted the need for a more formal transfer process and for a timelier notification of impending transfer. Nursing, support staff, and management viewed the project favorably, helping patients and their families feel more prepared for transfer. Multiple ICU nurses had greater understanding to the step-down unit and the way the unit works. The communication between the units was improved, with a few ICU nurses expressing a better understanding of the step-down unit and how it works.

Sustainability to date includes adoption by at least 2 other ICU's in the hospital and the potential addition to current ICU checklist used during rounds. Adding an item about transfer/disposition to the daily ICU checklist will help facilitate smoother transfer process for the patient and their family, and ensure the bedside nurse is aware of transfer as early as possible. Nursing, support staff, and management viewed the project favorably, and stated that the brochure helped patients and their families feel more prepared for transfer.

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Appendix A
Transfer Brochure

You are ready to transfer out of the ICU! This is an important transition in your recovery from this illness. This brochure will outline the process of transfer and explain policies and procedures of the new unit. Your nurse will review this information with you prior to transfer, so that you can discuss any questions or concerns that may arise.

Plan for leaving the ICU

You will be transferring to IMC, the Neurosciences Intermediate Care Unit

The Director of IMC is X, the Patient Care Managers (PCM's) are X and X. The PCM office is located directly outside the unit before the entry doors.

The unit telephone number is **xxx.xxx.xxxx** Nurses ask that all calls be held between 7:00-8:00 am/pm so that the nursing staff can perform change of shift duties.

IMC is an Intermediate Care Unit; this means that the unit is still a critical care unit. However, the nurses on 2EIMC care for up to 3 patients at a time. Vital signs and neurological checks are performed every 2 hours, which means that you may not see your nurse as often as you did in the ICU, but this is a good step in your healing!

In IMC, you will continue to have the same vital sign monitoring equipment as the ICU.

The medical team starts their rounds around 8:00 am, if you need to speak with the primary physician, they are available between 8:00am and 5:00pm, please ask your nurse for assistance.

IMC only has private rooms for patients requiring circumstances of medical necessity, such as isolation for various illnesses; otherwise, there are 2 or 3 patients per room. When there are 3 patients, often they will be mixed men and women.

Visiting hours are from 9:00am to 9:00pm daily with a maximum of 2 visitors at a time. There are two waiting areas (the same as for the ICU) outside the unit if there are more than two visitors. We ask that all visitors wait in the designated waiting areas until it is their turn to see their loved one. For security reasons, visitors are not allowed to spend the night in patient rooms. Additionally, nurses and unit leaders may restrict visitation times for patients based on their unique medical care needs.

Children under 14 years old are not permitted on the unit.

Please review this brochure and write any questions for discussion below.

Appendix B

Pre/Post-Test Nursing Perception Survey

Nursing Perception of Transfer Process: Neurosurgical ICU

This survey is part of the nursing project "***Transfer Bundle Use in the Intensive Care Unit: A Quality Improvement Project in a Neurosurgical Intensive Care Unit***"

- Your responses to this survey will be anonymous.
- Your responses will be aggregated to monitor and evaluate the implementation of the ***Transfer Bundle*** practice change.
- This quality improvement project has been reviewed by the MedStar Health Research Institute (MHRI) Institutional Review Board (IRB).
- For questions, please contact: Claire Wagner, BS, BSN, RN, CNRN, CCRN
  Principal Investigator

Directions:

- Please respond to each statement by checking the box with your perception of the current neurosurgical ICU transfer process.
- Submit the Checklist to the locked box in break-room.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. Our ICU currently has an appropriate transfer process in place.					
2. Patients and family members see transfer as a positive step in patients' recovery.					
3. In our unit, bounce-back readmissions occur because of patient/family concerns about care on step-down unit.					
4. It is important for patients and their family members to understand staffing ratios and the visitation policy on the step-down/general ward.					
5. It is important for patients to understand changes in their care team that will occur after transfer out of the ICU					
6. The transfer process is discussed with enough notice prior to the actual transfer.					
7. Use of a transfer brochure will help ease stress experienced by the patient and their family upon transfer out of the ICU.					
What information do you think is important for the patient/family to receive prior to transfer? Please list.					

Note. Adapted with permission from Mitchell & Courtney (2005a) An intervention study to improve the transfer of ICU patients to the ward – evaluation by ICU nurses *Australian Critical Care, 18*(3), 123-128.

Thank you for supporting this practice change!

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Appendix C

System Usability Scale

System Usability Scale

This survey is part of the nursing project "***Transfer Bundle Use in the Intensive Care Unit: A Quality Improvement Project in a Neurosurgical Intensive Care Unit***"

- Your responses to this survey will be anonymous.
- Your responses will be aggregated to monitor and evaluate the implementation of the ***Transfer Bundle*** practice change.
- This quality improvement project has been reviewed by the MedStar Health Research Institute (MHRI) Institutional Review Board (IRB).
- For questions, please contact: Claire Wagner, BS, BSN, RN, CNRN, CCRN
  Principal Investigator

Directions:

- Please respond to each statement by checking the box for your response to the ***Transfer Brochure***.
- Submit the Checklist to the locked box in the breakroom.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
8. I think I would like to use this product frequently.					
9. I found the product unnecessarily complex.					
10. I thought the product was easy to use.					
11. I think that I would need the support of a technical person to be able to use this product.					
12. I found the various functions in the product were well integrated.					
13. I thought there was too much inconsistency in this product.					
14. I imagine that most people would learn to use this product very quickly.					
15. I found this product very awkward to use.					
16. I felt very confident using the product.					
17. I needed to learn a lot of things before I could get going with this product.					

Note. Modified with permission from: Brooke, J. (1996). SUS-A quick and dirty usability scale. *Usability Evaluation in Industry, 189*(194), 4-7.

Thank you for supporting this practice change!

Appendix D
Transfer Bundle Checklist

Transfer Bundle Checklist: Neurosurgical ICU

This Checklist is part of the nursing project "***Transfer Bundle Use in the Intensive Care Unit: A Quality Improvement Project in a Neurosurgical Intensive Care Unit***"

- Your responses on this Checklist will be anonymous and all patient and clinician identifiers will be removed.
- The data will be aggregated to monitor and evaluate the implementation of the ***Transfer Bundle*** practice change.
- This quality improvement project has been reviewed by the MedStar Health Research Institute (MHRI) Institutional Review Board (IRB).
- For questions, please contact: Claire Wagner, BS, BSN, RN, CNRN, CCRN
  Principal Investigator

Directions:

- Complete this Checklist on each patient you transfer from the neurosurgical ICU by entering a check YES or NO.
- Apply a patient medical record label to the Checklist. The Checklist will be de-identified and given a document number.
- Submit the Checklist to the locked box in break-room.

Date/Time transferred ordered	Attach Patient Label Here	
Date/Time patient actually transferred		
	YES	**NO**
1. Did you get 24-hour notice of intent to transfer?		
2. Was the patient being transferred to 2E or 2EIMC?		
3. Was the *Transfer Brochure* reviewed prior to transfer?		
4. Was there family present at the time of *Transfer Brochure* review?		
5. Did the patient know they were being transferred?		
6. Were all questions related to transfer answered prior to the patient leaving the ICU?		

Thank you for supporting this practice change

Table 1 *Nursing Perception of Transfer Process Pre-Test Survey*

Question #	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1	1 (2%)	4 (11%)	15 (40%)	17 (47%)	
2		8 (22%)	11 (30%)	17 (47%)	1 (2%)
3	2 (5%)	15 (40%)	10 (27%)	10 (27%)	
4			2 (5%)	16 (43%)	19 (51%)
5				17 (47%)	20 (54%)
6	2 (5%)	21 (57%)	11 (30%)	3 (8%)	
7		1 (2%)	4 (11%)	23 (62%)	9 (24%)

Table 2 *Nursing Perception of Transfer Process Post-Test Survey*

Question #	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1	1 (4%)	2 (9%)	8 (36%)	10 (45%)	1 (4%)
2		6 (27%)	1 (4%)	11 (50%)	4 (18%)
3		8 (36%)	8 (36%)	7 (32%)	
4				11 (50%)	11 (50%)
5				9 (41%)	12 (55%)
6	2 (9%)	8 (36%)	4 (18%)	6 (27%)	2 (9%)
7				14 (64%)	8 (36%)

Table 3 *Transfer Checklist*

Question #	Yes	No
1	15 (71%)	6 (29%)
2	19 (90%)	2 (9%)
3	21 (100%)	
4	8 (38%)	13 (62%)
5	19 (90%)	2 (9%)
6	20 (95%)	1 (4%)

Table 4 *SUS Usability Scale*

Question #	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1				15 (68%)	7 (32%)
2	7 (32%)	14 (64%)	1 (4%)		
3			1 (4%)	12 (55%)	9 (41%)
4	8 (36%)	13 (59%)	1 (4%)		
5			1 (4%)	14 (64%)	7 (32%)
6	8 (36%)	11 (50%)	2 (9%)	1 (4%)	
7			2 (9%)	13 (59%)	7 (32%)
8	8 (36%)	13 (59%)	1 (4%)		
9		1 (4%)	2 (9%)	10 (45%)	9 (41%)
10	8 (36%)	10 (45%)	3 (14%)	1 (4%)	

Table 5 *Evidence Table* Author/Year	Study Objectives/ interventions or exposures compared	Design	Sample and Setting	Outcome studied/ Measures	Results	JHNEBP Level and Quality Rating
Bailey, Sabbagh, Loiselle, Baoileau, & McVey, 2009	The objective of this study was to describe family member perception of informational support, anxiety, satisfaction with care, and their interrelationships, to guide and refine a local informational support initiative and its evaluation. The intervention used was an informational support program.	Cross-sectional descriptive correlational pilot study	Collected data from a convenience sample of 29 family members using self-report questionnaires. (Family members of ICU patients in a 22-bed medical/surgical ICU in a 659-bed university hospital in Montreal). Inclusion criteria included – participants were at least 18 years of age, able to read English or French, in sufficiently good health to participate, have a relative or close friend currently hospitalized in the ICU for at least 24 hours	A self- report questionnaire modified from the Critical Care Family Needs Inventory (CCFNI) (Molter and Leske, 1983) was used to measure informational support. Additionally, participants' anxiety was measured using the State-Trait Anxiety Inventory (STAI). Satisfaction with care was measured using a self-report questionnaire developed by the ICU continuous quality improvement (CQI) team using Androfact ™. Data analysis was performed using SPSS.	Informational support – Results most consistently met: "had questions answered honestly", had "explanations that were understandable", and "knowing what was being done for patient at why" – least consistently met were information about chaplain, transfer plans, and about someone who could help answer their problems. Scores ranged from 29-80, mean 55.41, (SD 13.28) with greater scores meaning greater informational support (80 is highest score). Anxiety – participants had mean score of 45.41 (SD 15.27), with women having higher anxiety (46.58 SD = 16.17) then men (39.80, SD = 8.98). Sample was significantly higher than numbers for the general population ($t = 3.511$, $p < 0.002$). In the satisfaction with care category – the high score of the scale if 96, the higher the score, the greater the satisfaction with care. Scores ranged from 58.5-96 with	6B

					mean 83.09 (SD =15.49). Satisfactory aspects of care included respect of patients dignity, being treating like a person and not a case. Finally, in regards to correlation between informational support, anxiety, and satisfaction of care – a significant positive correlation between informational support and satisfaction of care was found ($r=.741$, $p<0.001$).	
Berube, Gelinas, Bernard, Gagne, Laizner, & Lefebvre, 2014	To evaluate the feasibility and acceptability of a nursing intervention program developed to optimize the transition of Spinal Cord Injury (SCI) patients and their family from ICU to trauma unit. The intervention bundle had three parts: an information provision for patients and their families about the trauma unit and the objectives of care on that unit, a gradual decrease of surveillance before	A participative-constructivist design was used	Nine patients (tetraplegic), 8 families, and 8 health professionals participated in this study. The study was conducted at a Level 1 trauma center in Montreal, Canada. Patients were selected from a 16-bed ICU/Intermediate care unit (IMC). The sample was selected over a 4-month period in 2010. Inclusion criteria included:	Self-report/interviews were used to measure the outcomes of this study.	11 patients and families met inclusion criteria, one declined participation and one was excluded due to motor/sensory impairments. The study found that 85% of patients and 79% of families found the interventions helpful – most helpful was found to be the portion regarding information on the trauma unit function and objectives of care, as well as the decrease in nursing surveillance and monitoring equipment prior to transfer. Additionally, it was found that discussing the move out of ICU as a positive step towards recovery was viewed as helpful by both patients and their families. Health care workers noted that patient and their families displayed less	6B

	transfer out of ICU, and optimization of nursing care using communication between the two units.		diagnosis of SCI, length of stay 7 or more days, family had to be relative or significant other of patient, and health care providers needed 2 or more years working with the patient population. Exclusion criteria for patient and family included known mental illness		anxiety regarding transfer out of ICU because of clear communication/information dissemination.	
Brooke, Hasan, Slark, & Sharma, 2012	The objective of this study was to review the efficacy of information interventions on the reduction of anxiety experienced in patients (and their family members) when transferring from the Intensive Care Unit (ICU) to the general ward.	Comprehensive systematic review	High-quality RCT's comparing an informational intervention to reduce transfer anxiety with standard of care, using the State Trait Anxiety Inventory were included. 266 studies from 1990-2011 were identified, 5 studies enrolling 629 participants	Transfer anxiety as measured by the State Trait Anxiety Inventory (STAI) - transfer anxiety is measured by controlling trait anxiety and measuring the state anxiety before and after transfer	Family members' transfer anxiety was significantly reduced (OR, 1.70; 95% CI, 1.15-2.52; P=.01) when using an information provision intervention versus standard of care; found that a transfer letter, care conference, and individualized transfer all significantly reduced transfer anxiety	1-2 A

			met inclusion criteria. Participants were patients and their family members who were not terminally ill and admitted to the ICU/CCU and subsequently transferred to the general ward.			
Davidson,Powers, Hedayat, Tieszen, Kon, Shepard, Spuhler, Todres, Levy, Barr, Ghandi, Hirsch, Armstrong, 2007	This paper presents the clinical practice guidelines for support of the family in a patient-centered ICU.	Clinical Practice Guideline	The guidelines were developed through extensive literature review of articles published between 1980 and 2003, focusing on family-centered care. Additional searches were performed for each of the subheadings laid out in the guideline: Family Coping, Staff Stress Related to Family Interactions, Cultural Support		Of significance to the project of interest the sections of Family Coping and Staff Stress Related to Family Interactions were reviewed. Under Family Coping, there is a focus on the stress of transfer and that written information provided to families may ease this transition. Families should be provided with ample information (in language that they can understand) in a variety of formats to best meet their needs. Additionally stated is the need for prompt notification of any changes in the patient's status. In the Staff Stress Related to Family Interactions subheading, it is recommended that all team members are informed of treatment goals and plans to	1 A

			of the Family, Spiritual and Religious Support, Family Visitation, Family Environment of Care, Family Presence on Rounds, Family Presence at Resuscitation, and Palliative Care.		ensure clear messages are delivered to the families. Providing education on how the ICU works, visiting hours, etc. are important to ensure good communication is set from the beginning of the ICU stay.	
Gustad, Chaboyer, & Wallis, 2008	The objective of this study was to quantify levels of anxiety experienced by ICU patients just before transfer to the ward, and then twice after transfer, in order to test the hypothesis that anxiety levels would change over the three data points. The study used self-reported anxiety scores to test the hypothesis.	3-month prospective, repeated measure cohort study	In the study period of three months, 249 patients were admitted to the ICU (at a Level 3 ICU in a major teaching hospital in Australia). Inclusion criteria included – length of stay greater than 24 hours before being informed about their transfer to the ward, must be age 18 or over and able to write, read, understand English. Weekend transfer and	Self-reported measures of anxiety were gathered using the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS-A), a 7-item Likert scale, on three occasions – when told of imminent transfer (T1), after 4 hours on the ward (T2), and after one night on the ward (T3).	Of the 249 admitted patients, 55 (22%) met inclusion criteria. 44 agreed to participate and 35 completed the entire study. The internal consistency of HADS-A scores was above 0.8 (Cronbach's alpha) at all three-measurement points. 6 patients displayed anxiety scores at T1 above 10 (cut of point for anxiety disorder), this number decreased to 3 at T2, and 2 at T3. Of note, this ICU already had a structured transfer process in place, showing that a well-planned transfer is not more stressful than normal life (sample compared to normal life stressors of the Australian general population).	4 B

			patients with known psychiatric illnesses were excluded from the study.			
Lee, Oh, Suh, & Seo, 2016	The objective of this study was to develop and examine a relocation stress intervention program tailored for the family caregivers of patients scheduled for transfer from a surgical ICU to a general ward. The intervention included pre-existing educational materials regarding specific disease related complications, and evidence-based relocation-related needs of family for surgical ICU patients.	Nonequivalent control group, non-synchronized pretest-post-test design	60 family members/caregivers of patients (one family member per patient) with neurosurgical or general surgical conditions who were admitted to the ICU – relocation stress and family burden measured 3 times; before intervention, immediately after transfer, and 4-5 days after transfer. Inclusion criteria: age over 18, patient had to be in ICU at least 3 days with orders for transfer to general ward, the family member was the main care giver, had	Using the Family Relocation Stress Scale developed by Oh et al (2015) – a 17 item, 5 point scale consisting of 4 subscales – separation anxiety related to transfer from ICU, recognition of changes in treatment condition/environment, recognition that patients is still critically ill, and apprehension regarding nursing care in the general ward.	The effects of intervention were assessed by looking at within and between group differences: Within group difference – mean relocation stress score decreased immediately after transfer, then increased at 4-5 days after transfer in control group (Not found to be significant $F = 1.66$, $p = 0.205$). In the experimental group, mean relocation stress scores continuously and significantly decreased after the transfer ($F = 5/42$, $p = 0.007$), indicating the family relocation stress intervention significantly reduced stress levels among family caregivers.	3B

			the ability to understand the questionnaire, and consented to participation in the study			
Mitchell and Courtney, 2005	The objective of this study was to develop a brochure, with relevant information about patient transfer, for ICU nurse to use in face-to-face communication with patients and their family members during transfer from the ICU. The intervention of this study was a brochure used as a framework for transfer out of the ICU.	Original research – brochure designed with Knowles' Adult Learning Framework using a mixed-design to collect data from families and nurses in the ICU	82 family members of ICU patients participated in the experimental group, 80 family members in the control or standard care group, additionally, 33 ICU nurses were included in the study survey.	The brochure was used for an 8-week trial period, a 5-point Likert scale survey was used to measure feelings surrounding transfer in the experimental and control groups, as well as the nurses who participated in transfer.	The brochure helped nurses address individual family needs during transfer from ICU, with 95% of the nurses (n=33) recommending use of the brochure for all future transfers. Family members who received the brochure (n=82, p = 0.01) reported significantly more satisfaction with transfer than the standard of care (n=80) group. The experimental group also reported feeling "more prepared for transfer" (p=0.001) and "informed that transfer plans were being made" (p=<0.0001) than the control group.	3 B
Mitchell and Courtney, 2005	The objective of this study was to examine the efficacy of a structured, individualized method of transfer from the ICU, from the perspective of the ICU nurse. The intervention used was a specifically	An evaluation study was designed to assess the intervention.	The setting was a large, metropolitan Australian ICU. The sample included all ICU nurses employed by the hospital who perform transfer of ICU patients.	A 9-item questionnaire was developed to evaluate the ICU nurses perceptions of the usefulness of the structured transfer together with feelings of family members.	All participants (n=33) considered their units attitude towards family as "quite good" (n=25) or "excellent" (n=8) and almost all (n=24) considered family members "very important" to patients recovery. When asked of the importance of the transfer process, 93.9% (n=31) consider it "important" or "very important". When	4 B

	designed brochure containing specific topics (transfer plans for the patient, ward information, staff information, patient expectations in the general ward, and support services for family members) for the nurses to discuss with the patient and their families prior to transfer out of the ICU.		The total potential sample was 120 nurses, 110 were recruited into the study. Of the 110, 40 used the tool to transfer patients, and 33 completed the questionnaire.		asked of the helpfulness of the intervention in providing a framework for discussion, 29 participants stated the intervention was either "quite helpful" or "very helpful". Participants were asked if they would recommend the intervention to support all transfers from the ICU and 94% (n=31) stated they would recommend the intervention to individualize and support transfers on their units.	
Paul, Hendry, & Cabrelli, 2003	The goal of this study was to develop an evidence-based information booklet for patients and their families as they prepare for transfer out of the ICU. The intervention of study was the creation and use of a personalized transfer booklet for patients as they prepared for transfer from the ICU. The booklet contained information regarding preparing to leave the ICU,	Collaborative study using exploratory design with elements of the action research cycle	This was a 3-phased study. In phase 1 (identifying information needs of patients and family), 7 patients and 2 family members were identified and interviewed by a nurse liaison. Phase 2 (design and development of the booklet) included 4 previous ICU patients, 3 family members, and 15 staff.	Interviews were performed in each phase, phase 1 looking at thematic content and used to structure the booklet content for phase 2. Phase 2 used interview and feedback to edit and amend the booklet until no further comments were received. Phase 3 was measuring overall response to the booklet itself through interviews with the nurse liaison.	Phase 1 results were used to focus the content in the booklet. Categories that were found included: uncertain expectations about the ward and the future, concerns and worries, ongoing physical effects, effects on relatives, anxieties and fears, lack of confidence in themselves and others, questions and communication issues, and memory loss. Phase 2 results include the development of the actual booklet (final categories listed in objective/intervention section of table). Phase 3 – Interviews of patients, family members, and staff found: all patients and	4 B

	details of the transfer process, information on the new unit, recovery from illness, preparing to go home, advice for first days at home, details on where to find further help, and diary pages to keep notes. When the booklet was given, it was documented in the ICU transfer summary.		Phase 3 (implementation of the booklet into practice) included 25 patients and family members. Inclusion criteria included adult aged patients and family members, and those patients who were expected to make a good recovery on the ward at the time of transfer.		family members found the 24-48-hour period prior to transfer as most appropriate time to receive the booklet, it was also found that most patients and family members knew who to contact with further questions, and that having the booklet prior to transfer allowed time to study the information to ask questions shall they arise.	

JHNEBP Evidence Rating Scales	
Strength of Evidence	
Level I	Experimental study/randomized control trial (RCT) or meta-analysis of RCT
Level II	Quasi-experimental study
Level III	Non-experimental study, qualitative study, or meta-synthesis
Level IV	Opinion of a nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines)
Level V	Opinion of individual expert based on non-research evidence (includes case studies); literature review; organizational experience e.g. quality improvement and financial data, clinical expertise, or personal experience)