

**A Quality Improvement Plan to Decrease Acute Care Transfers through
Better Staff Communication About Status Changes Among Assisted Living
Residents**

by

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Abstract

Background: Elderly residents of assisted living facilities (ALFs) are generally frail and may have multiple comorbidities (National Center for Assisted Living, 2010). Inadequate communication of changes in resident status precludes early intervention and may result in unnecessary acute care.

Local Problem: A small state-licensed ALF experienced unnecessary transfers to acute care because unlicensed assistive personnel (UAP) providing the majority of hands-on care did not promptly communicate changes in resident status.

Methods: Application of the INTERACT model was guided by the use of the plan, do, study, act (PDSA) cycle. The transfer logs were used to extract de-identified data for all-cause acute care transfers over three-month periods before and after the intervention to assess any change in the number of transfers, occurrence of communication errors, and negative outcomes related to acute care transfers. In addition, participating staff completed a readiness survey before and after participation in a training session to identify barriers to successful implementation of the intervention and to determine the impact of the training on staff receptiveness to change.

Intervention: The interventions to reduce acute care transfer (INTERACT) model was implemented at a small state licensed residential facility to improve patient outcomes by reducing unnecessary transfers to acute care through better communication among staff, with medical providers, and with other facilities.

Results: Of the 22 unlicensed assistive personnel who participated in the INTERACT quality improvement (QI), only 21 completed the readiness for change survey. A comparison of facility transfer data from the three-month pre- and post intervention periods revealed a statistically significant difference between the mean numbers of pre- and post intervention acute care transfers ($t [2] = 5.00, p < 0.05$ level); however there were no statistically significant differences in the pre- and post intervention occurrences of communication errors ($t [2] = .961; p > 0.05$ level) or negative outcomes (e.g., extended stay, hospital admission, or move to different facility) related to acute care transfer ($t [2] = 0.00; p > 0.05$). The pre- and post intervention surveys indicated an increase in staff readiness for change after participation in the INTERACT QI training.

Conclusions: Implementation of the INTERACT model resulted in a statistically significant reduction of resident transfers to acute care. Although the QI did not produce statistically significant decreases in communication errors or negative consequences, a trend toward improvement in these areas was observed despite the small sample size and relatively short study period.

Key words: *INTERACT; assisted living facility; quality improvement; unlicensed assistive personnel; communication strategies; transitions; patient safety; handoffs*

22 suggesting involvement of the informal caregiver in safety and quality
23 improvement (QI) initiatives and nurse-led collaboration among all providers for
24 improved health outcomes (Lin et al., 2012). The QI began with a survey of UAP
25 to determine their readiness to improve reporting of resident health status
26 changes. Involvement of the UAP was instrumental to the accomplishment of
27 improved reporting and effective communication with transfer facilities.

28 **Problem Description**

29 At a small Texas ALF with 40 residents cared for primarily by 22 UAP,
30 the emergency room (ER) was frequently used to manage acute changes in
31 resident status. Ouslander and Berenson (2011) identified gaps in patient safety
32 resulting from inconsistent reporting of changes in resident health status, often
33 causing delays to timely interventions that could preempt avoidable
34 hospitalization. In addition, nurses interviewed in a qualitative study by Olsen et
35 al. (2013) reported that incomplete or incorrect information about medications,
36 activities of daily living, advance directives, and next of kin or decision makers
37 was often obtained during transfers. The importance of timely communication
38 regarding changes in resident status by UAP to prevent unnecessary
39 hospitalization cannot be overstated based on the assertion by Shah, Burack, and
40 Boockvar (2010) that many elders experience an irreversible decline in physical
41 mental function as a result of hospitalization. The failure to report pertinent
42 changes in resident status adds to a gap in practice and increases the risk of

43 negative outcomes. Sentinel events are most often attributed to ineffective
44 communication based on Joint Commission on Accreditation of Healthcare
45 (JCAHO) sentinel event root causes data for 2004-2015 (JCAHO, 2016).

46 **Clinical Question**

47 This QI was initiated to answer the following clinical question: Will a
48 communication protocol and training module to improve reporting and
49 documentation of resident status changes by Unlicensed Assistive Personnel
50 decrease acute care hospitalizations over a three month period? Ineffective
51 communication among facility staff and with external caregivers during
52 transitions caused residents to be transferred for simple care treatments.
53 Residents who required hospitalization were also at risk when transfer
54 documentation was insufficient and when primary care physicians were not
55 properly notified. The ALF seeks to align with the 2012 Centers for Medicare &
56 Medicaid Services directive to minimize unnecessary hospitalizations by
57 instituting procedures that ensure effective communication among facility
58 caregivers and with outside caregivers during transitions.

59 **Available Knowledge**

60 In a review of quality improvement (QI) projects targeting community-
61 dwelling older adults, Golden, Tewary, Dang, and Roos (2010) identified a need
62 for improved communication among health care providers. They found that
63 effective use of training and technology, along with transparent sharing of

64 documentation, was critical to reduced hospitalizations. Marshall, Clarke, Peddle,
65 and Jensen (2015) reported that many hospital admissions could be prevented,
66 resulting in Medicare savings that could fund additional quality improvements. A
67 QI initiative using the interventions to reduce acute care transfer (INTERACT)
68 model (Ouslander, Bonner, Herndon, & Shutes, 2014), for the identification,
69 management, and evaluation of acute status changes will reduce resident acute
70 care transfers.

71 Shah et al. (2010) defined the failure to effectively share resident
72 information as an “information gap” that exposes residents to a higher risk for
73 poor outcomes and readmissions. Although they expressed optimism about the
74 potential reduction in emergency acute care transfers through implementation of
75 the INTERACT model, they did acknowledge that elimination of all emergency
76 acute care transfers is unrealistic because elderly residents are at inherent risk for
77 emergency illnesses (Shah et al., 2010).

78 According to Herrin et al. (2015), elderly ALF residents are hospitalized
79 more frequently and facilities do not perform well on quality indicators (patient
80 satisfaction and safe medication reconciliation) with respect to discharge and
81 follow-up care. Health care providers including primary care physicians,
82 hospitals, medical suppliers, and home health agencies have achieved minimal
83 success in managing frail elderly patients with multiple comorbidities (Herrin et
84 al., 2015).

85 Transitional Care

86 Residents returning to the ALF from acute care are at increased risk of
87 adversity from inadequate communication between facilities during transition.
88 Ouslander et al. (2011) and Purdy (2010) recommended that the period
89 immediately before and after discharge be considered part of transitional care.
90 Complications of medication regime and proper follow up after the discharge will
91 result in a second admission. Transitional care has to be coordinated to and from
92 the acute care hospitalization (Zimmerman, Sloane, & Reed, 2014). Therefore, the
93 INTERACT model addresses transitional care both before admission and after
94 discharge by applying evidence-based interventions such as standardized forms,
95 checklists, communication tools, and leadership skills to minimize unnecessary
96 hospitalizations among residents of long-term care facilities.

97 Implementation of the INTERACT model also aligns with the Institute for
98 Health Improvement (IHI, 2012) Triple Aim framework (TAF), which serves as a
99 foundation for a change in the healthcare focus of long-term care facilities to
100 optimized health for their residents. The model is a simple triangular lexicon with
101 the three points representing: (a) health of the population; (b) enhancing the
102 experience of care; and (c) reducing per capita cost of care for the benefit of
103 communities (IHI, 2012).

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106 Standardized Patient Handoffs

107 The ALF needed a user-friendly way for the UAP to communicate with
108 other licensed and professional staff that would align with quality and safety
109 guidelines. According to Ouslander et al. (2014), implementation of evidence-
110 based communication tools improved information exchange during transfers to
111 acute care improved patient outcomes in a similar vulnerable populations of
112 elders.

113 Acute care staff received the documents and medical information
114 necessary to provide appropriate and effective treatment and influence acute care
115 outcomes. The standardized forms used by hospital staff when residents were
116 discharged back to the facility were already familiar to ALF staff. Olsen et al.
117 (2013) identified communication barriers that arise in after-hours phone reporting
118 and when ALF residents are transferred for emergency care, resulting in a failure
119 to provide complete information. The goal of handoff communication tools is to
120 convey correct information within the proper timeframe (Olsen et al., 2013). The
121 use of the early warning tool improved handoff reporting between UAP and the
122 nursing supervisor. The user-friendly tool for UAP ensured the reporting of
123 significant information that facilitated early identification of healthcare changes.
124 The transfer tool ensured that important information is communicated when
125 residents are transferred to the hospital emergency department. Callinan and
126 Brandt (2015) reported that standardized INTERACT forms would positively

127 impact resident care and that the use of standardized patient handoffs in acute care
128 transfers would benefit quality of care through timely transmission of vital
129 information.

130 **Rationale**

131 The plan, do, study, act (PDSA) model (Cleary, 2015) served as a
132 theoretical framework to address the clinical question of whether a QI program to
133 improve communication skills and quality of care provided to ALF residents by
134 UAP would reduce emergency acute care transfers over a three-month period. The
135 intervention was adapted from the INTERACT model (Figure 1) identified by the
136 CMS and consistent with established standards for a quality improvement project
137 (Ouslander et al., 2014). The INTERACT model is a user-friendly clinical,
138 educational tool that guides staff of all skill levels in reporting and documenting
139 changes in resident status to reduce transfers from long-term to acute care
140 facilities (Ouslander et al., 2014; Tappen, Engstrom, & Ouslander, 2014),
141 reducing the risk of complications and unnecessary health care spending
142 associated with unnecessary transfers (Burke, Rooks, Levy, Schwartz, & Ginde,
143 2015). The intervention seeks to improve communication through the use of
144 standardized, evidence-based tools that would minimize negative consequences
145 resulting from inadequate communication, failure to report changes in resident
146 status, and avoidable emergency transfers.

147 Lin et al. (2012) identified a gap in current practice with respect to
148 effective communication between health care personnel at long-term and acute
149 care facilities. Karen and Andrew (2013) described communication between
150 health care providers as very important because it reduces the probability of return
151 to the ER or re-hospitalization after the patient has been treated and released. Use
152 of the INTERACT model (Ouslander et al., 2014) to effectively guide staff
153 reporting and documentation of changes in resident status to reduce transfers from
154 long-term to acute care facilities has been reported (Ouslander et al., 2014;
155 Tappen et al., 2014), resulting in reduced risk of complications and unnecessary
156 health care spending associated with unnecessary transfers (Burke et al., 2015).

157 Therefore, this project implemented the INTERACT model as a QI
158 intervention to prevent unnecessary resident transfers from the ALF to acute care
159 facilities through improved communication of changes in resident status. This
160 coordinated intervention focused on training staff to use communication tools,
161 reporting logs, and standardized forms to achieve desired outcomes including: (a)
162 decrease in emergency acute care transfers; (b) fewer communication errors; (c)
163 fewer negative outcomes resulting from acute care transfers; and (d) increased
164 staff readiness for change with respect to improved reporting of changes in
165 resident status.

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Specific Aims

169 This project aimed to use standardized, evidence-based tools to improve
170 communication of changes in resident health status by UAP in an assisted living
171 facility, reducing the occurrence of communication errors, avoiding unnecessary
172 transfers to acute care, and preventing negative outcomes resulting from acute
173 care transfers. The PICOT (population, intervention, comparison, outcomes, time)
174 analysis method (Melnik & Fineout-Oveholt, 2011) was used to examine the
175 question of whether using the INTERACT model (Ouslander et al., 2014) to
176 achieve early identification of patients at increased risk for hospitalization and to
177 facilitate timely communication of status changes to health care providers would
178 prevent avoidable transfers to acute care.

179

Methods**Context**

181 The selected ALF was an appropriate setting for this QI project because of
182 the number of UAP relative to patient census, their levels of training, and the ages
183 and comorbidities of the residents for whom they were providing direct care. The
184 risk of ER visits and hospitalizations among residents of long-term care, primarily
185 older adults, increases with age (Purdy, 2010) and with physiological changes that
186 accompany advancing age (Foster et al., 2012).

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189 Intervention

190 The intervention included training of all staff including direct care and
191 some leadership in the facility, as well as root cause analysis (RCA) by an
192 interdisciplinary team (IDT). Approval for implementation of the INTERACT
193 quality improvement required presentation of the training by a Certified Interact
194 Champion (CIC). Once the presenter obtained the necessary certification, the
195 researcher met with the nursing supervisor and facility owner to develop a project
196 schedule. The planning step in the PDSA cycle (Cleary, 2015) involved setting
197 the aims and identifying the primary interventions that all participants in the QI
198 project would understand. The owner assigned the nursing supervisor as the
199 facility champion and appointed a co-champion to assist in task management and
200 data collection as recommended in the INTERACT model (Ouslander et al.,
201 2014) to increase project sustainability.

202 **Planning.** The researcher and facility champion met several times during
203 the planning phase to prepare for implementation. Posters of the INTERACT
204 model (Ouslander et al., 2014) were strategically placed in areas near phones and
205 in hallways near resident bedrooms. Resident data were de-identified and secured
206 by the facility champion to ensure resident confidentiality. The facility champion
207 was trained on all the INTERACT forms (INTERACT II, 2014), which were used
208 to record pre-intervention transfer data obtained from the facility tablet log.
209 Scheduled dates for the information and training session were posted in the break

210 room and activities area. Staff readiness for change was assessed using a ten
211 question qualitative survey approved by the project preceptor to inform
212 stakeholders about the project and enlist their support. Staff were provided with
213 an overview of the INTERACT model (Ouslander et al., 2014) and trained to
214 properly record patient information, communicate it effectively to care providers,
215 and provide post discharge follow-up or transitional care. Role-play scenarios
216 were conducted in which UAP were given an opportunity to report changes in
217 health status and notify the health care provider using appropriate INTERACT
218 forms.

219 The second step of the PDSA cycle (Cleary, 2015) involved
220 implementation of the INTERACT communication model (Ouslander et al.,
221 2014). At the selected ALF, two to three UAP per ten residents work a single 12-
222 hour shift to assist residents with daily activities. Participants were released from
223 duty to attend an interactive and informational in-service training on daily use of
224 the INTERACT II (2014) communication tools to record the baseline condition of
225 each resident including medical status, number of activities assisted in a day, and
226 duration of sleep, as well as to document changes in resident status.

227 **Training.** A combination of educational training included a PowerPoint
228 presentation, face-to-face discussions, case presentation scenarios, and
229 INTERACT questions and answers during shift change and huddle periods. The
230 training was open to all levels of staff, but the primary focus was UAP. Meetings

231 were repeated on each shift to ensure availability for all staff. Small groups of
232 UAP also participated in role-playing and practice using a situation, background,
233 assessment, and recommendation (SBAR) format.

234 The phase I training module provided an overview of the problem and the
235 specific aims of the study. The facility champion and co-champion were
236 introduced and the presenter explained the connection between INTERACT and
237 increased quality of resident care. Participants were taught how to recognize and
238 report changes in resident health status and were provided with personal copies of
239 the stop-and-watch forms and the SBAR form. A review chart, a flip chart with
240 SBAR instructions and example for reporting of resident status changes by UAP,
241 and a table about recognizing symptoms were posted in the break room.
242 INTERACT II (2014) posters were also strategically placed throughout the
243 facility.

244 The phase II training module began with a review of Phase I. The
245 presenter discussed the importance of consistent participation to project
246 sustainability and shared the results of the IDT root cause analysis. Baseline data
247 and targets for improvement were reviewed and shared with staff. Negative
248 consequences were not discussed in an accusatory manner, but as a learning
249 process. The presenter explained the value of data tracking to care planning and
250 identification of service gaps and training needs. Some care planning forms were
251 replaced with INTERACT forms to eliminate redundancy. The phase III training

252 module began with a review of phases I and II. UAP were asked to provide input
253 on benchmarking, suggestions on role-playing scenarios, and feedback on the
254 INTERACT model (Ouslander et al., 2014).

255 **Implementation.** The certified INTERACT trainer and facility champion
256 were available to assist staff with initiating use of the stop and watch early
257 warning tool (INTERACT II, 2014). Root cause analysis was performed on all
258 resident transfers to acute care by an interdisciplinary team (IDT) formed during
259 the second phase of development. Staff received feedback on data obtained from
260 transfer logs, feedback from health care providers, and results of the IDT root
261 cause analysis. The results of RCA were conducted using a non-punitive approach
262 (Ouslander et al., 2014), with identified avoidable hospitalizations presented in a
263 spirit of learning instead of blaming or accusing.

264 The PDSA cycle (Cleary, 2015) allowed for incorporation of small cycles
265 of trial and error in which cycles that were helpful were repeated and those that
266 were ineffective were documented and discontinued. This process permitted
267 challenges to be easily addressed and prevented project disruptions. The model
268 also includes tracking, trending, and recording benchmarks of well-defined
269 measures; the opportunity to learn from RCA of resident transfers to acute care;
270 and incorporates use of INTERACT forms into daily activities (Ouslander et al.,
271 2014).

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273 **Study of the Intervention**

274 The effectiveness of the intervention was evaluated using a one group,
275 pre/post test study design. The INTERACT Acute Care Transfer Log
276 (INTERACT II, 2014) was used to record data regarding transfers to acute care,
277 communication errors, and resident outcomes and staff completed a change
278 readiness survey before and after the intervention in order to determine whether
279 there were significant differences in the mean numbers of pre- and post
280 intervention communication errors, acute care visits, negative consequences
281 resulting from acute care visits, and staff readiness scores of UAP personnel. In
282 addition, transfers were evaluated by the IDT to assess the root cause and
283 determine whether timely communication of changes in resident status
284 contributed to the transfer and whether the transfer might have been preventable.

285 **Sample**

286 The sample selected for this study consisted of a convenience sample of
287 40 residents at a small Texas ALF. It was assumed that the residents of this
288 facility were representative of the general population of older adults in long-term
289 care facilities. It was also assumed that the 22 participating UAP were
290 representative of assistive personnel in other small residential long-term care
291 facilities in terms of training and function. In addition, it was assumed that
292 transfers to acute care over the three-month pre-intervention period and post-
293 intervention period were representative of the incidence of resident transfers

294 before and after the intervention. It was anticipated that early reporting of changes
295 in resident status by UAP would facilitate early intervention by the nurse
296 practitioner (NP) and primary care medical team, decreasing the need for
297 hospitalization.

298 **Measures**

299 This QI focused on transfers to acute care before and after implementation
300 of the INTERACT model in the designated ALF. A review of resident records
301 from a three-month period before the start of the project was conducted to
302 determine the incidence of communication errors, the number of resident transfers
303 to acute care before the intervention, and the incidence of negative resident
304 outcomes related to acute care transfers. After introduction of the INTERACT
305 model (Ouslander et al., 2014), the incidence of communication errors, resident
306 transfers to acute care before the intervention, and the incidence of negative
307 resident outcomes related to acute care transfers were improved.

308 **Analysis**

309 Data interpretation and analysis assigns significance and implications to
310 research findings (Melnyk & Fineout-Oveholt, 2011); however, this can only be
311 achieved if the investigator employs effective data collection methods. A
312 quantitative method was applied to critically analyze whether the intervention
313 improved staff communication, decreased acute care transfers, or reduced
314 negative patient outcomes resulting from transfers to acute care facilities. The

315 acute transfer form was used to track the number of ER visits per resident, the day
316 and time of the transfer, and the length of stay if the resident was admitted to the
317 hospital. The IDT identified root causes for the transfer, communication errors,
318 and negative consequences resulting from resident transfers. The mean, effect,
319 and p-value were calculated from the acute transfer data on the number of
320 emergency acute care transfer events per resident and the all cause total of
321 emergency acute care transfer events for all residents. A p-value was calculated
322 from aggregate resident data before and after implementation of the intervention
323 to determine the statistical significance of any observed difference.

324 **Ethical Considerations**

325 Risk of harm to human subjects participating in this study was minimized
326 through de-identification of data by the facility supervisor to ensure resident
327 anonymity and confidentiality. All participating staff were provided with verbal
328 and written information about the study and were informed of their right to
329 decline participation or end their participation at any time without any negative
330 consequences. Participants were offered the opportunity to ask questions about
331 the study and completed a signed consent before completing the anonymous
332 survey questionnaires.

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Results

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Pre- and post intervention data for communication errors, acute care transfers, and negative outcomes associated with resident transfers to acute care are included in Table 1.

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Communication Errors

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No statistically significant difference was found in pretest and posttest communication errors ($t [2] = .961; p > 0.05$) at the 0.05 level, although a trend of decreased communication errors was observed. Analyses of results pertaining to the number of pre- and post intervention communication errors are shown in Table 2.

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Acute Care Transfers

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A statistically significant difference was found between the mean pre- and post intervention emergency acute care visits ($t [2] = 5.00, p < 0.05$) at the 0.05 level. Further data analysis employing the means indicated the number of emergency visits decreased after the interventions. Tracking results with respect to day and time of transfer indicated that most of the transfers were happening during the evening shift between 10pm and 2am. Analyses of results with respect to the number of pre- and post intervention acute care transfers are shown in Table 3.

355 Negative Consequences of Acute Care Transfers

356 Negative consequences of failure to report changes in health status to
357 provider, missing and incorrect transfer documentation along with notification of
358 return back to facility. No significant difference was found between negative
359 consequences before and after the intervention ($t [2] = 0.00, p > 0.05$) at the 0.05
360 level. Further data analysis revealed identical mean number of hospital negative
361 consequences. Table 4 presents findings for matched t-test for pre- and post
362 interventions for the number of negative consequences related to resident transfers
363 to acute care. As indicated in Table 5, no statistically significant difference was
364 found in the mean pre- and post intervention correlation between number of
365 moves and incidence of negative consequences ($t [2] = 1.00; p > 0.05$) at the 0.05
366 level. Further data analysis utilizing the mean results revealed that the number of
367 moves negative consequences decreased after the interventions.

368 Staff Readiness Scores

369 A paired t-test revealed a statistically significant difference ($t [2] = -9.123;$
370 $p < 0.001$) in mean pre- and post intervention overall staff readiness scores of
371 UAP personnel with regard to the QI program among the UAP staff (Table 6).
372 Further data analysis using the mean results revealed a significantly higher mean
373 readiness score among UAP staff after participation in the intervention.
374 Additionally, a paired t-test on the individual items of the staff readiness survey
375 showed significant differences on four of the ten statements (Table 7). Significant

376 differences were found between the pre- and post intervention scores with regard
377 to item 1 (this facility likes to do new and different things to help patients), item 2
378 (the facility leadership actively supports change to achieve quality improvement
379 goals), item 3 (when this facility goes through a change, I feel I know what will
380 change for me in my job, and item 6 (this facility has an effective mechanism in
381 place for communicating changes in resident's status). On all four items, the UAP
382 staff had significantly higher readiness scores after participation in the
383 intervention.

384 **Summary**

385 Implementation of this QI indicated staff ability to improve on
386 communication errors related to transfer of ALF residents to acute care. It also
387 promoted greater confidence among UAP in their ability to recognize and report
388 changes in resident health status. Staff received complements from hospital staff
389 on their use of standardized forms to effectively communicate resident status
390 during transfers to acute care. Root cause analyses revealed two avoidable
391 transfers to acute care during the three-week absence of the nurse practitioner.
392 The on-call doctors were not comfortable leaving residents in the ALF with a
393 status change. The INTERACT QI helped to guide the facility into a culture of
394 improved safety and promoted a spirit of inquiry and exploration, which are
395 particularly important for QI sustainability.

396

397 **Interpretation**

398 The results from this QI project indicated that the INTERACT
399 intervention was effective in achieving the desired reduction in acute care
400 transfers. Marshall et al. (2015) introduced a model called Care by Design (CBD),
401 a quality initiative developed after a qualitative study on primary care of the
402 elderly with the original intent of reducing emergency trips to the hospital. The
403 number of hospital admissions was significantly reduced in Nova Scotia through
404 use of the CBD program. It is similar in structure to the INTERACT model
405 (Ouslander et al., 2014), with communication interventions including transfer
406 forms that accompany long-term care residents to the emergency department
407 (Marshall et al., 2015).

408 The QI also prompted a culture change within the facility toward
409 increased UAP awareness of the need for timely communication of changes in
410 resident status. This project received the active support of organizational
411 leadership and benefitted from an effective facility champion, which both
412 contributed to the successful QI. The UAP were receptive to the added
413 responsibility of reported changes in resident status using the stop-and-watch
414 pocket cards. Their excitement to participate also led to a more patient-centered
415 care approach.

416

417 Limitations

418 This study was conducted using a population that was assumed
419 representative of small residential ALFs and UAP providing care in those
420 facilities. The sample included only one facility and a relatively small population
421 (n=40), therefore additional research is needed to verify whether the observed
422 findings are generalizable to other facilities with larger populations. Another
423 limitation was the lack of a tracking system to identify which staff members were
424 not using the stop and watch pocket card. Staff reverted back to writing in a paper
425 tablet for a week because the transfer record book was misplaced, which may
426 have impacted findings. In addition, residents returning to the facility after acute
427 care were not always logged in upon return to the facility. The study may also
428 have been impacted by the absence of the NP managing the calls from the facility
429 for three weeks at the start of the intervention. Another challenge was that the on
430 call physicians were not always available or comfortable treating in the facility
431 and referred patients to the ER on several occasions during the post intervention
432 period for which acute care might have otherwise been avoided. Training was
433 presented to new hires by a different nursing supervisor during a period when the
434 facility champion was on leave, which may also have affected findings. Another
435 limitation was that the IDT did not meet consistently and some team members
436 were contracted home health professionals committed to specific residents and
437 were not available to participate in ongoing reviews.

438

Conclusion

439 Implementation of the INTERACT quality improvement will promote
440 timely communication of changes in resident status by UAP, leading to early
441 treatment and reducing transfers to acute care. Although this project focused on
442 improving communication of changes in resident status by UAP, other
443 opportunities may exist for improved training and function of unlicensed assistive
444 staff. The low cost of implementation and the financial benefit from reduced acute
445 care transfers add value to this QI. The knowledge transfer from the INTERACT
446 QI adds an additional measure of patient safety by reducing the likelihood of
447 communication errors. The success of this quality improvement has prompted
448 consideration of a future initiative to integrate INTERACT with the electronic
449 health record for tracking of changes in health conditions that are treated within
450 the facility.

451

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452 This project did not obtain any funding from any funding organizations in
453 the community, profitable, or charitable sectors.

454

455

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Table 1. Pre- and Post Intervention Data Totals

Month	Communication Errors	Acute Care Transfers	Negative Outcomes
Pre-Intervention			
Month 1	9	9	4 hospitalizations/3 moves
Month 2	3	6	2 hospitalizations/0 moves
Month 3	4	7	1 hospitalizations/0 moves
Total	16	22	7 hospitalizations/3 moves
Post Intervention			
Month 1	3	5	4 hospitalizations/1 move
Month 2	4	4	2 hospitalizations/0 moves
Month 3	3	3	1 hospitalizations/0 moves
Total	10	12	7 hospitalizations/1 move

Table 2. Differences in Pre- and Post Intervention Communication Errors

Statistics	Pre-Intervention	Post-Intervention
Mean	5.33	3.33
SD	3.21	.57
SE	1.86	.33
Mean Difference	2.00	

df	2	
t-value	.961	
p-value	.438	

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Table 3. Differences in Pre- and Post Intervention Emergency Acute Care Visits

Statistics	Pre-Intervention	Post-Intervention
Mean	7.33	4.00
SD	1.53	1.00
SE	.88	.58
Mean Diff	3.33	
df	2	
t-value	5.000	
p-value	.03*	

*Significant at the 0.05 level

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Table 4. Differences in Pre- and Post Intervention Negative Consequences of Acute Care Transfers

Statistics	Pre-Intervention	Post-Intervention
Mean	2.33	2.33
SD	1.53	1.53
SE	.88	.88
Mean Diff	0	
df	2	
t-value	.000	
p-value	1.000	

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Table 5. Differences in Pre-Intervention and Post Intervention Number of Moves Negative Consequences

Statistics	Pre-Intervention	Post-Intervention
Mean	1.00	.33
SD	1.73	.58
SE	1.00	.33
Mean Diff	.666	
df	2	
t-value	1.00	
p-value	.423	

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Table 6. Differences in Pre- and Post Intervention Staff Readiness Scores

Statistics	Pre-Intervention	Post-Intervention
Mean	39.57	47.28
SD	4.03	1.55
SE	.88	.34
Mean Diff	-7.71	
df	20	
t-value	-9.123	
p-value	.000*	

*Significant at the .001 level.

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Table 7. Differences in the Pre- and Post- Intervention Survey Item Responses of UAP Staff Members

Item	Pre-Test Mean	Post Test Mean	df	t	p
• This facility likes to do new and different things to help patients.	4.14	4.86	20	-2.85	.010**
• Facility leadership actively supports changes toward achievement of quality improvement goals.	4.43	4.76	20	-2.32	.031*
• When things change at this facility, I know how it will affect my job.	4.14	4.71	20	-2.34	.030*
• The facility's quality improvement goals are known throughout the organization.	4.52	4.67	20	-1.14	.267
• I know how to assess whether a resident's status has changed.	4.47	4.76	20	-1.67	.110
• This facility has an effective mechanism in place for communicating changes in resident's status.	4.19	4.80	20	-2.44	.024*
• The mechanism for communicating changes in resident's status needs improvement.	4.47	4.71	20	-1.42	.171
• I know what represents a change in resident status with respect to health or daily activities.	4.29	4.62	20	-1.58	.130

• I know what represents a change in resident status with respect to health or daily activities.	4.29	4.62	20	-1.58	.130
• I support quality improvement interventions that improve patient outcomes.	4.62	4.71	20	-.46	.649

*Significant at the .05 level; **Significant at the .01 level.

Note: SD=standard deviation; SE=standard error; df=degrees of freedom.

Statement of Original Work and Signature

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