

# Using an Avatar Virtual Service Animal to Enhance Care and Decrease Falls and Delirium in Hospitalized Older Adults

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## Background

Delirium is an under-recognized yet not uncommon adverse effect of hospitalization, and older people are at higher risk for developing delirium while hospitalized. Delirium may affect up to half of all elderly persons who are hospitalized, and that of these at least 20% will experience complications during their hospitalization as a result of delirium. Delirium also can result in long term cognitive changes and functional decline. Loneliness is also linked to functional decline in seniors, both living in the community and when hospitalized. Falls are the most common adverse event associated with hospitalization and risk increases with age. Delirium is a common contributing factor to falls, therefore decreasing incidences of delirium should decrease falls. Animal Assisted Therapy (AAT) has been demonstrated to be a cost effective therapy that improves mood and is meaningful to hospitalized, and community based older adults. Animal assisted therapy is a proven intervention to treat loneliness, but not readily available to all whom might benefit.

## Study Aim

To investigate the impact of a virtual service animal on delirium, depression, loneliness, cognition, falls and restraint use in hospitalized older adults.

## Setting

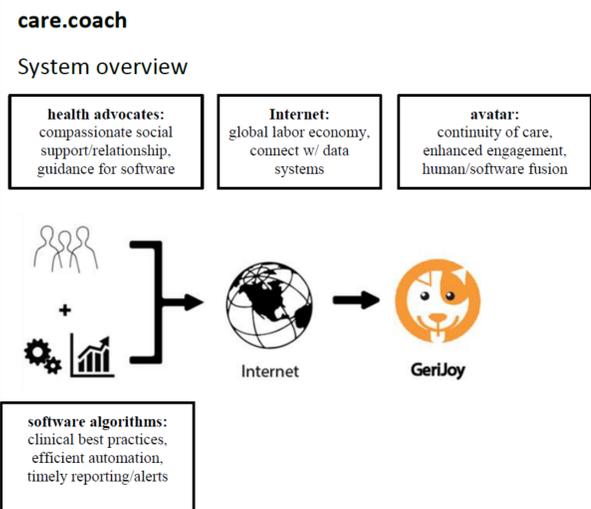
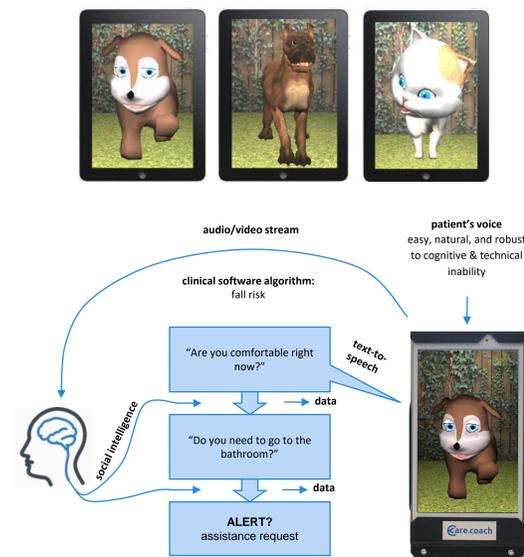
- Jamaica Hospital Medical Center
- 100,000 Emergency Department visits annually
- 23,166 patient admissions annually
- Ethnically diverse patient population and ethnically diverse staff
- Three inpatient medical units
  - Two intervention units (6 South and 5 South) and One control unit (3 South).
  - Beds = 34-37

## Instruments

- Cognition: Mini Cog
- Delirium: CAM
- Loneliness: 3 item UCLA Loneliness questionnaire
- Depression: Geriatric Depression Scale (15 item)
- Demographic data
- Falls
- Hours of restraint use

## The Technology

### care.coach



## Results

### Patient Engagement with Avatar

- Average # of avatar check-ins per patient per day: 71.3
- Average minutes of avatar engagement per patient per day: 61.0
- Average # of media files (music and images) used per patient per day: 11.5
- Average # of "protocol tasks" completed per patient per day: 6.5

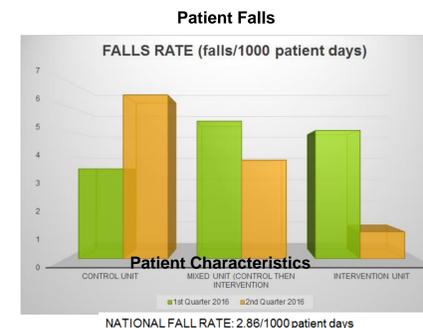


Table 1: Patient Characteristics by Study Arm

	Intervention (n=41)	Control (n=54)	p
Age (mean)	76.88	76.22	0.7073
Race (%)			
White	24.39	25.93	
African American	53.66	40.74	
Asian / Pacific Islander	12.20	22.22	
Hispanic	7.32	9.26	
Other	2.44	1.85	0.678
Sex (%)			
Male	31.71	55.56	
Female	68.29	44.44	0.021
Residence Prior To Admission (%)			
Home	92.68	85.19	
Nursing Home	4.88	14.81	
Other	2.44	0.00	0.161
Discharge Location (%)			
Homeless	2.44	0.00	
Home	78.05	83.33	
Nursing Home	12.20	12.96	
Short-Term Rehabilitation	2.44	0.00	
Other	4.88	3.70	0.592
English as a Second Language (%)			
No	60.98	51.85	
Yes	39.02	48.15	0.375

### Delirium

- Participants in the intervention group had a greater improvement in their overall mean delirium score than participants in the control group (p = 0.003).

	Intervention Group (n=41)	Control Group (n=54)
Pre Mean Score	0.29	0.11
Post Mean Score	0.02	0.05

### Loneliness

- Participants in the intervention group had a greater improvement in their overall mean Loneliness Score than participants in the control group (p = 0.008).

	Intervention Group (n=41)	Control Group (n=54)
Pre Mean Score	4.98	4.72
Post Mean Score	3.76	4.35

### Depression and Cognition

- The mean pre and post scores were not statistically different between the Control and Intervention groups for Depression and Cognition.

### Restraint Use

- There was no statistically significant difference in the use of restraints during hospitalization between the Intervention and Control groups.

### Qualitative Results

#### Patient Feedback

- "I love it."
- "It reminds me of my dog, Poochie"
- "It is adorable"
- "This is just what my mother needed in the hospital"
- "It's a good thing for my mother. Thank you."

## Conclusions

The use of care.coach positively impacted patient care, decreasing delirium, falls, and loneliness in hospitalized older adults.

We need to continue to enroll additional participants to further evaluate the efficacy of the intervention.

## References

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