



Telewound Pilot Project: Analysis of Estimated Episodic Wound Care Costs and Reimbursements in Home Health Care

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BACKGROUND

- Sentara Home Care Services (SHCS) geographically covers most of VA and parts of NC for home health.
- With limited resources for specialized wound care personnel, SHCS needed to leverage technology to provide services over the geographic footprint.
- A pilot telehealth program, the Telewound Program, provides in-home complex wound care for Medicare PPS home health patients from a wound care nurse specialist using live two-way audio and video during a patient’s skilled nursing visit.
- The population of complex and hard to heal wound patients gains access to wound care specialist consults to improve overall patient outcomes.

PURPOSE

The Telewound Program’s goals are to improve quality of life for patients, increase geographic coverage for patients needing ostomy/wound consultation, improve cost effectiveness and nursing utilization, expand clinician knowledge of wound care products with evidence and rationale to request appropriate wound care, and decrease potentially avoidable events.

PROJECT AIMS

One of the program’s goals is to improve cost effectiveness and provide appropriate nursing utilization. Therefore this quality improvement (QI) project sought to accomplish the following:

1. Calculate average and median estimated episodic costs for skilled nursing visit costs, wound care supply costs, total costs, and actual reimbursement.
2. Examine significant differences in estimated episodic skilled nursing visit costs, wound care supply costs, total costs, and actual reimbursement based on the acceptance of telewound nurse recommendations by physicians.
3. Examine differences in estimated episodic skilled nursing visit costs, wound care supply costs, total costs, and actual reimbursement exist based on patient characteristics.

METHODOLOGY

This was a retrospective study design. Episodic care was recorded by the telewound nurse in MS Excel spreadsheets and abstracted from Cerner Homeworks database.

- **Inclusion criteria:** Medicare home health patients with episode dates starting and ending between April – October 2018.
- **Exclusion criteria:** Non-Medicare patients and/or Hospice patients.

Estimated costs were analyzed at the episodic level. An episode is 60 days of continuous care. Estimated episodic costs were calculated using:

1. Number of weeks between episode start dates and the first telewound visit, between subsequent telewound visits, and the last telewound visit and episode end dates;
2. Number of current ordered or accepted recommended skilled nursing visits per week (note: delivered visits were *not* used);
3. Current ordered or accepted recommended wound care supply costs per skilled nursing visit; and skilled nursing visit cost (\$150/visit).

RESULTS

- Data from 135 Medicare PPS home health patients with 183 episodes were analyzed.
- Telewound nurse conducted 263 telewound visits between April – Oct. 2018.

Aim 1: Estimated Episodic Costs and Reimbursements for Wound Care (Table 1)

	Estimated Skilled Nursing Visits	Estimated Wound Care Supplies	Estimated Total Costs	Reimbursements Total
Mean	\$3,150.71	\$268.48	\$3,419.20	\$2,805.89
S.D.	\$1,123.20	\$383.28	\$1,314.48	\$1,118.02
Median	\$3,792.86	\$143.29	\$3,816.09	\$2,361.41
Minimum	\$150.00	\$0.00	\$150.00	\$282.28
Maximum	\$8,850.00	\$2,564.03	\$11,328.32	\$6,993.82

Table 1. Episodic Estimated & Reimbursed Costs of Existing and New Wounds Actual costs may be lower due to use of ordered vs. delivered visits in the estimated episodic cost calculations.

Aim 2: Differences in Estimated Episodic Wound Care Costs and Reimbursements Based on Provider Acceptance of Telewound Nurse Recommendations

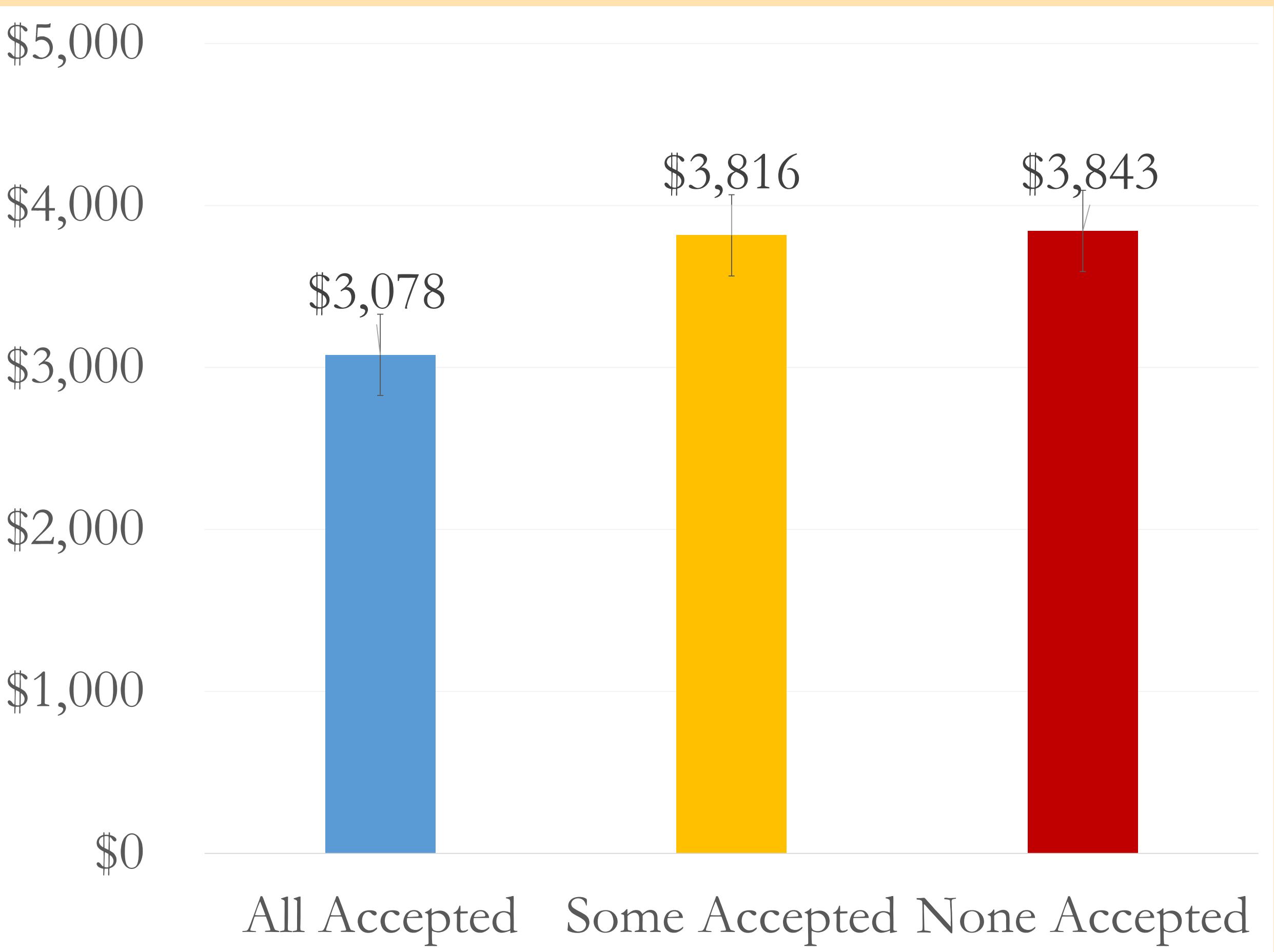


Figure 1. Kruskal-Wallis *H* test, $\chi^2(2) = 15.21, p = .000$.

- Estimated episodic total costs and skilled nursing visit costs were significantly lower when all telewound nurse recommendations were accepted compared to when no recommendations were accepted during an episode
- Estimated episodic wound care supply costs were significantly lower when all *or* some of the telewound nurse’s recommendations were accepted compared to when no recommendations were accepted by provider during an episode.
- Differences in reimbursements by recommendation groups were not statistically significant.

Aim 3: Differences in Estimated Episodic Wound Care Costs and Reimbursements Based on Patient Characteristics

- Differences in estimated episodic costs were found by wound type. Estimated episodic costs associated with skilled nursing visit costs were highest among surgical wounds whereas venous stasis wounds had the highest estimated episodic wound care supply costs.
- There were no statistically significant differences in estimated episodic total costs or reimbursements by patient age, gender, or race.

CONCLUSION

- Key strength is SHCS’ first attempt to calculate wound care costs at the episodic level because reimbursements are not calculated solely by skilled nursing visits and wound supplies.
- Initial analyses of 6 months of data suggest the program has a positive effect on lowering estimated episodic wound care costs.
- Physicians accepted recommendations made by the telewound nurse after over half of her online visits. Of note, changes in the number of weekly skilled nursing visits were not made during 80% of her telehealth visits therefore most recommended changes were for supplies.
- Increased savings may be achieved through appropriate recommendations of lower cost formulary vs. non-formulary supplies given the difficulty in affecting reimbursement amounts.
- Future analyses can address the remaining program goals of this innovative telehealth program.