

Development and Evaluation of a Comprehensive Diabetes Management Program in Long Term Care

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Background

- Diabetes is a common and increasingly prevalent disease state in long term care (LTC)
- 74% increase in diagnosis of diabetes in seniors between 2003 and 2013¹
- Diagnosis of diabetes in elderly is an independent predictor of LTC placement²
- Outcome studies for development of guidelines around diabetes management in LTC are lacking
- In the fall of 2012, OMNI Health Care gathered stakeholders to address the problem of diabetes in LTC which led to the establishment of the Diabetes Assessment Team (DAT)
- Comprehensive diabetes program developed and implemented in 16 LTC facilities in Ontario, Canada

Objective

- To reduce hypoglycemic events by 30% through a comprehensive diabetes management program by June 2015

Methodology

Design:

- Effectiveness of program continuously evaluated and modified using statistical process control method
- Subgroup follow-up analysis conducted at 2 years (April—June 2015) on 8 of 16 OMNI homes for comparison with baseline measurement (April—June 2013)

Interventions:

- Education session to LTC staff
- Training of Diabetes Champion at each facility
- Implementation of evidence based interdisciplinary diabetes protocol
- Audit feedback report to LTC staff

Measures

Primary Outcome Measure:

- Average number of hypoglycemic events over 3-month interval (total # of episodes/total # of residents who experienced hypoglycemia)

Secondary Outcome Measure:

- Use of sliding scale insulin and sulfonylureas: high risk regimens associated with increased risk of hypoglycemia

Process Measure:

- Consistency in implementation of program across all homes using operational toolkit

Balancing Measure:

- Degree of glycemic control using A1C results over 24-month period

References

¹Canadian Institute for Health Information, (2015). *Diabetes and Kidney Failure on the rise among seniors*. <https://www.cihi.ca/en/types-of-care/specialized-services/organ-replacements/diabetes-and-kidney-failure-on-the-rise-among>

²Tsuiji I, Whalen S, Finucane TE. Predictors of nursing care placement in community-based long-term care. *J Am Geriatr Soc*. 1995; 43:761-766

Results

Table 1 - Demographics and Clinical Characteristics of patients in chart abstraction sample

	Pre-intervention (N = 197)	Post-intervention (N=200)
Mean Age (years) (SD)	81.2 (2.78)	81.5 (2.14)
Female (n, %)	124 (62.9)	131 (65.5)
Mean number of Comorbidities (SD)	8.07 (1.78)	7.77 (1.48)
Insulin therapy alone (%)	20.8	15.5
Oral anti-hyperglycemic Agents (OAA) alone (%)	32.0	23.0
Combination of Insulin and OAA (%)	17.8	25.5
Diet alone (%)	29.4	36.0

Figure 1. Comparison of Average Number of Events/Resident who Experienced Hypoglycemia

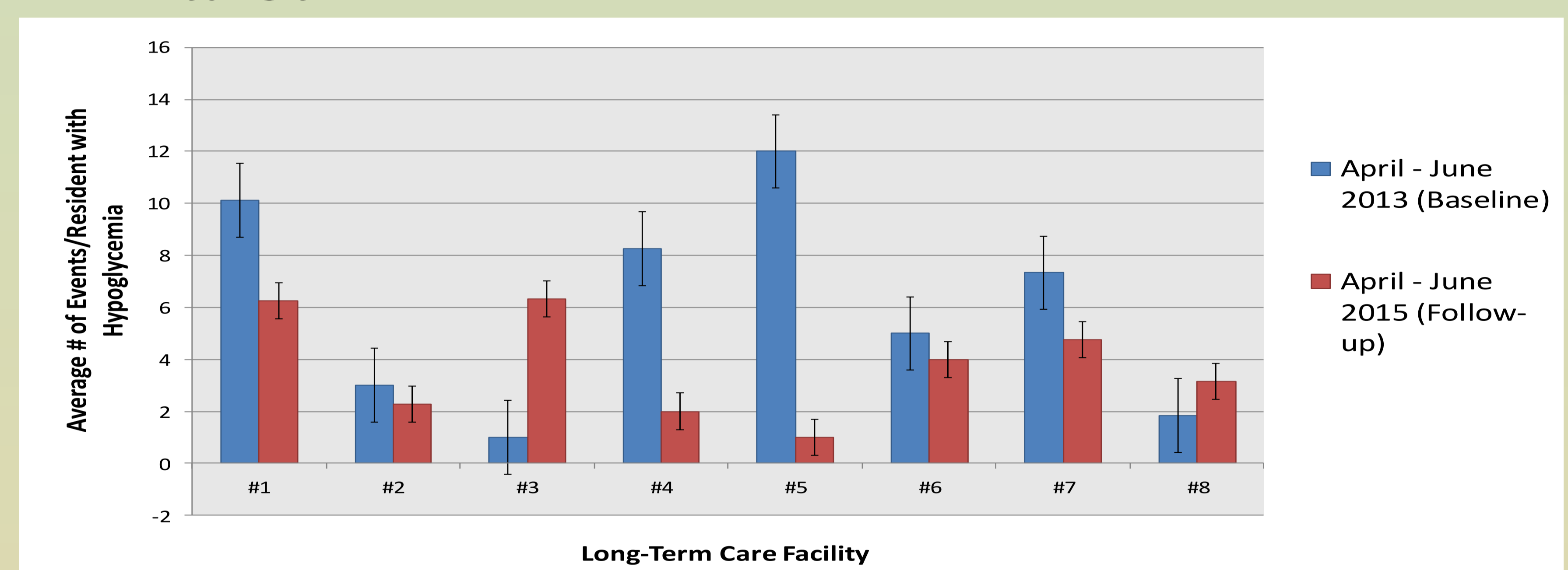


Figure 2. Run Chart of Sliding Scale Insulin Use

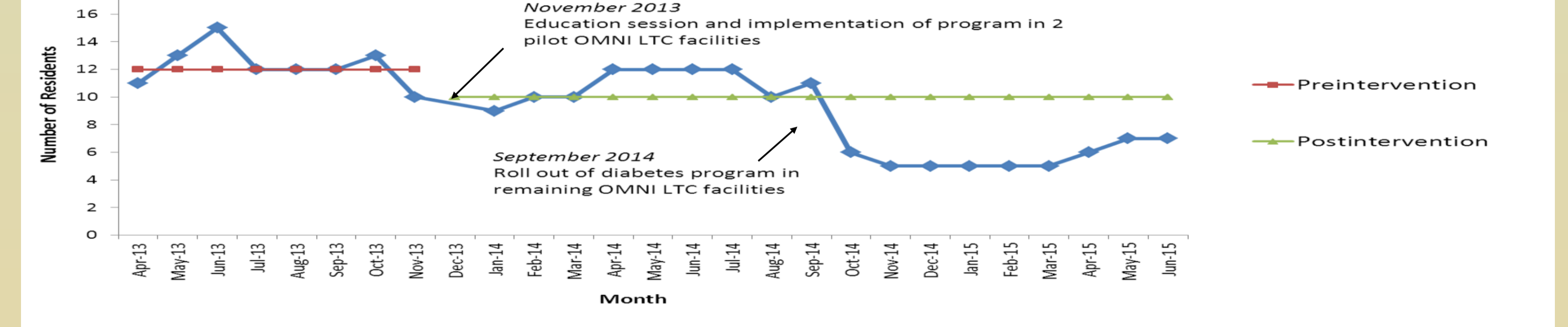
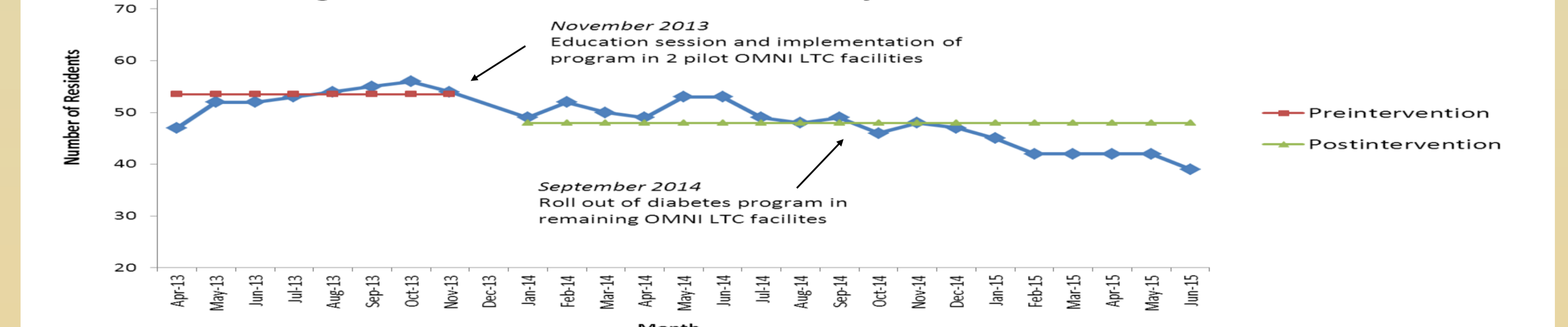


Figure 3. Run Chart of Sulfonylurea Use



Conclusion

- Implementation of a comprehensive diabetes program significantly reduced the occurrence of hypoglycemic events in diabetic residents
- An upward shift in the degree of glycemic control (A1C) reflects the promotion of a less stringent approach to diabetes management in the frail elderly promoted in the protocol (in alignment with new CDA recommendations)
- Recommendations to modify therapy (i.e. discontinuing high risk medications, lowering doses and standardizing therapy) were successful in shifting the overall blood glucose readings towards appropriate ranges, thus reducing the incidence of hypoglycemia
- Ontario Long Term Care Association (OLTCA) has adopted this innovative quality based procedure and is looking to expand the program beyond OMNI long-term care facilities in the near future

Acknowledgements



ONTARIO LONG TERM CARE ASSOCIATION



IN INITIATIVE



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