



Introduction

Frequent Admitters' (1% of patient pool) average health service utilization cost is estimated to be **SGD\$29,547** per patient, much higher than SGD\$1,589, the average for the patient population. To reduce unnecessary readmissions, TTSH has in place a team-based home visit programme – Virtual Hospital (VH) initiative. The programme seeks to assist patients with high risk of readmission by providing appropriate case management and transitional care from acute to step-down care through a multidisciplinary team.



- Frequent admitters who fulfill eligibility criteria identified by a Health Manager (HM)
- Enrolled upon informed consent
- HM reviews patients in their homes
- Pharmacist referral if required
- Pharmacist reviews case and provide necessary recommendations for DRPs
- HM/physician discusses care plan and follow-ups



Objective

To investigate the **impact** of the individual role of a **Pharmacist** as part of the VH team in conducting home-based medication reviews on **Emergency Department (ED) visits and Hospital admissions**
Average length of stay (ALOS)



VS



INTERVENTION

CONTROL

Methodology

Study Design:	
Retrospective review	
Primary outcome measures: number of ED visits and Hospital admissions	Secondary outcome measures: Average length of stay

All Patients enrolled by the Virtual Hospital from January to December 2014 (n=203)

Patients who were reviewed by a Pharmacist via home visit medication review (n=68)

Patients who were NOT reviewed by a Pharmacist via home visit medication review (n=134)

Excluded Patients who:

Uncooperative (n=1)

Rejected the service (n=9)
Passed away/referred under care of another team within 1 month (n=4)
Uncontactable (n=1)
Uncooperative (n=1)

Total number of patients analysed

N=67

n=119

Numbers analysed at 1 month: 67
Numbers analysed at 3 month: 67
Numbers analysed at 6 month: 65

Numbers analysed at 1 month: 119
Numbers analysed at 3 months: 118
Numbers analysed at 6 months: 109

Results

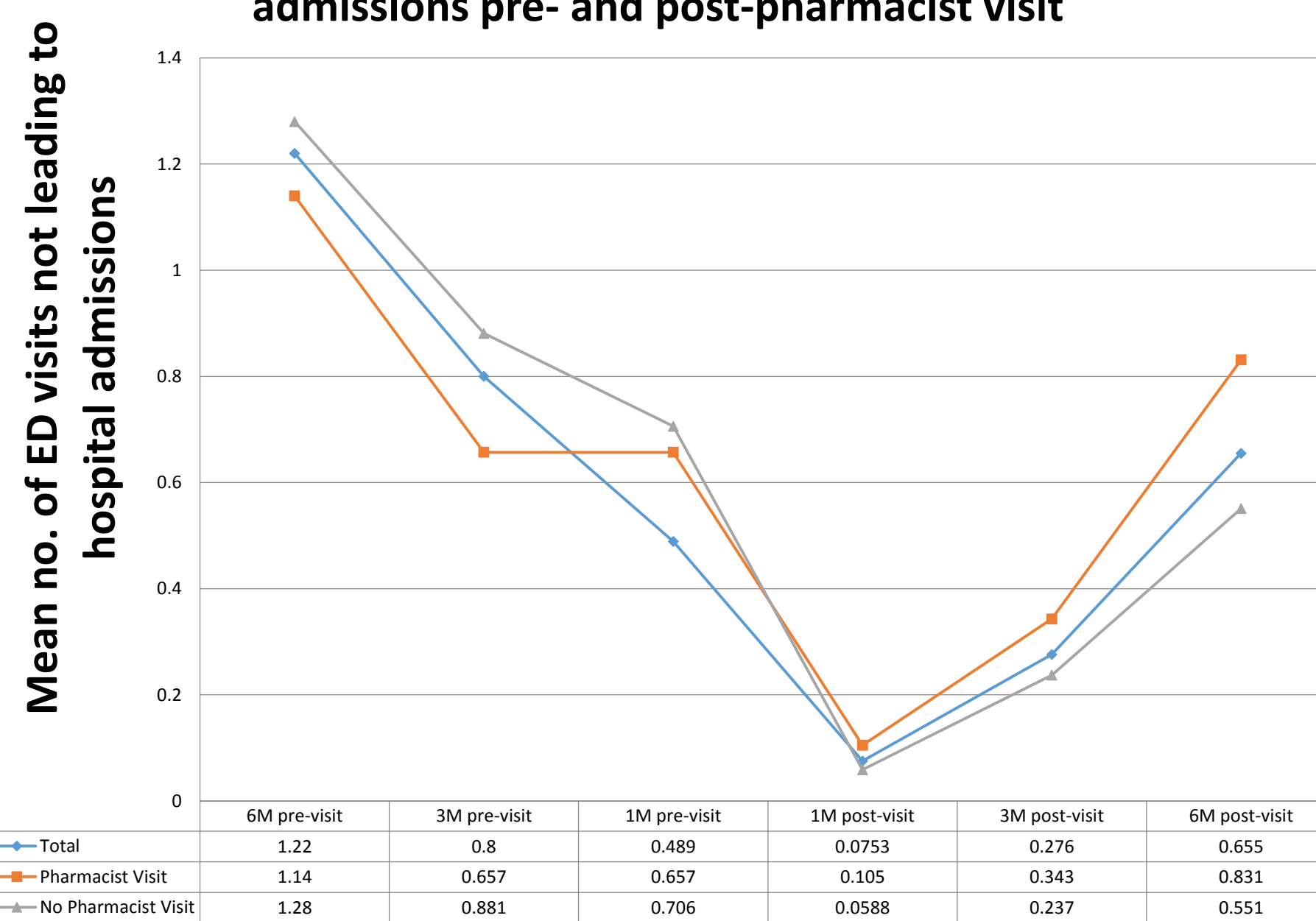
Mean ALOS 6M pre-and post-visit

	Pre-visit	Post-visit	p-value
Total	7.09	8.17	0.3676
Pharmacist	6.32	9.55	0.6879
No Pharmacist	7.53	7.39	0.163

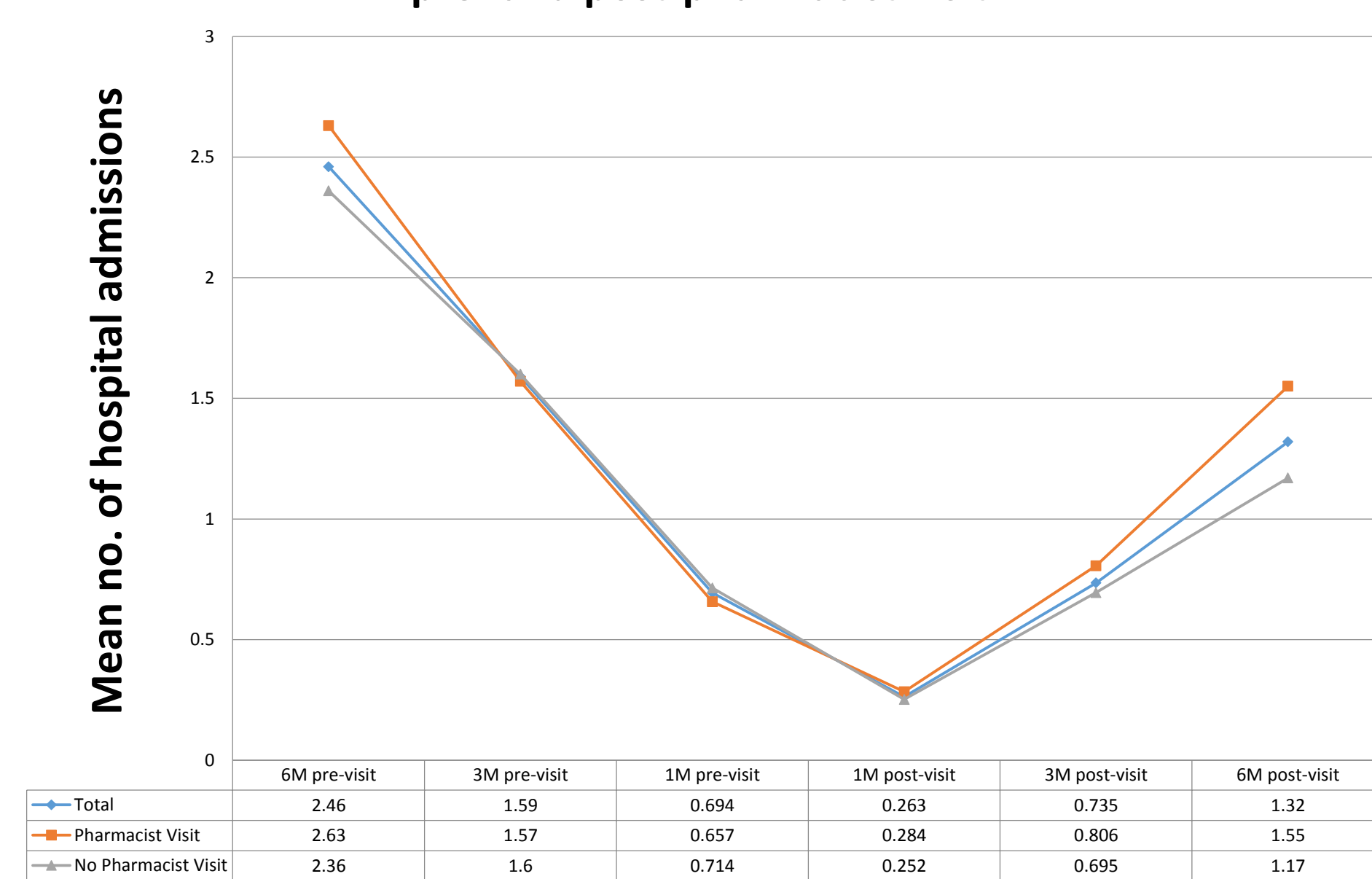
Comparison of Baseline demographics between patients who received and not received Pharmacist Home Visit

	With Pharmacist, n=67 Mean (SD)	Without Pharmacist, n=119 Mean (SD)	P-value
Comorbidities	7.9 (2.9)	5.6 (3.2)	< 0.0001*
Charlson's Score (unadjusted)	2.4 (1.5)	1.7 (1.6)	0.002*
Charlson's Score (adjusted)	5.4 (1.7)	4.5 (1.8)	0.0015*
Chronic Meds	10.6 (4)	7.2 (3.9)	<0.0001*
Non-Chronic meds	6.5 (4.8)	3.7 (2.6)	<0.0001*
Total Meds	17.1 (6.1)	10.8 (4.8)	<0.0001*

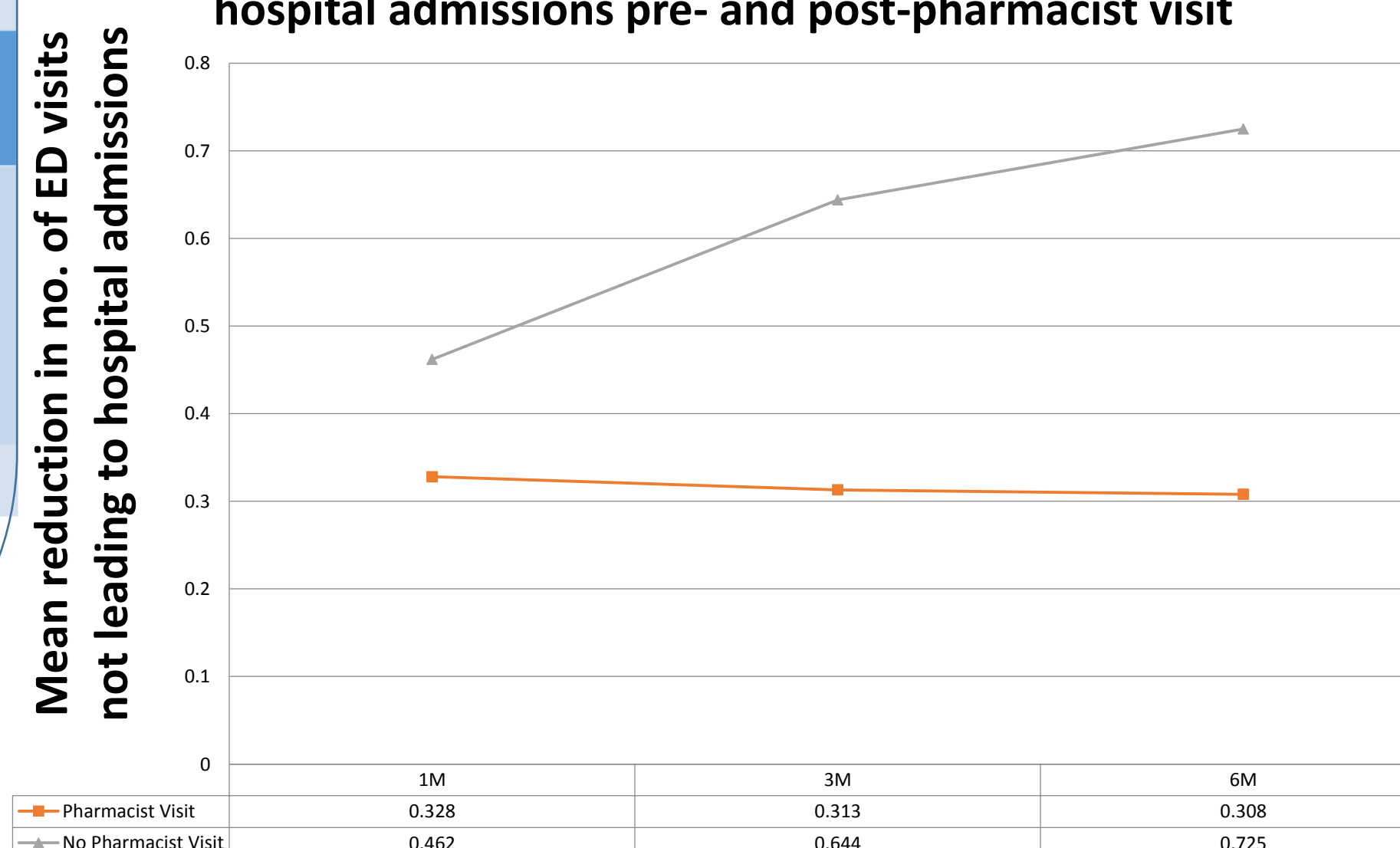
Comparison of ED visits not leading to hospital admissions pre- and post-pharmacist visit



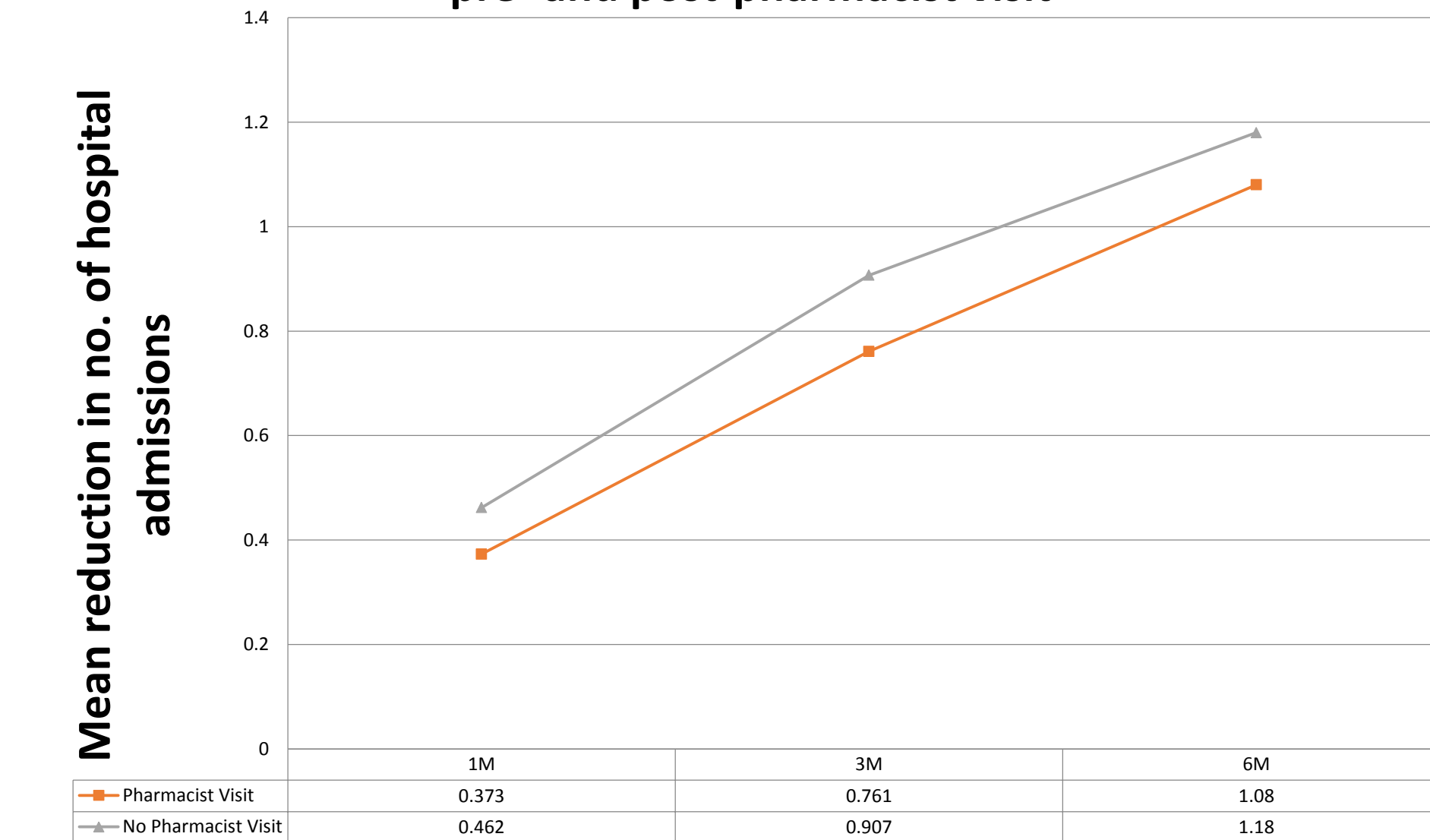
Comparison of hospital admissions pre- and post-pharmacist visit



Comparison of the reduction in ED visits not leading to hospital admissions pre- and post-pharmacist visit



Comparison of the reduction in hospital admissions pre- and post-pharmacist visit



Discussion

- The baseline demographics of the intervention and control groups are significantly different in terms of co-morbidities and the complexity of medication regime.
- There is an reduction in ED Visits and Hospital Admission rates for all VH patients post visit. However, the differences in the ED visits and Hospital Admission rates between the control and intervention group is not statistically significant.

Conclusion

Pharmacists were referred to review patients with high number of co-morbidities and medications and contributed to ensure that reduction in ED visits, hospital admissions and ALOS were similar to the group that were not referred.

Related works

- Holland, R. et al (2007). *BMJ*, 334(7603), 1098. doi:10.1136/bmj.39164.568183.AE
- Kraska, J. et al(2001). *Age and Ageing*, 30(3), 205-211.

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