Title: Evaluation of the effectiveness of the HARP Chest Pain Pilot program on reducing hospital utilisation and costs: An interventional study.

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Background: Patients who frequently attend Emergency departments with Chest Pain do not always "fit" into established pathways for those having an Acute Myocardial event and are often discharged from the ED to home with short lengths of stay. The Cardiology Length of stay Project (2009) demonstrated that within six months 25% of 12 – 14 hour stayers in the Royal Melbourne Hospital (RMH) Emergency Department (ED) with Chest Pain were admitted back to ED, and that 5 – 10% of the population who have Percutaneous Intervention (PCI) presented back to ED with atypical Chest Pain.

There have been few studies designed to address the needs of patients frequently attending hospital with Chest Pain. Evidence has shown that tailored telephone support programs can support patients to self manage their disease and improve modifiable risk factors. Evidence has also shown that patients with Angina or Chest Pain are not likely to be enrolled in mainstream secondary prevention programs; this program was designed to address this need.

Aim: To assess the impact on Hospital presentations, admissions and costs of a phone based program for patients frequently attending the Royal Melbourne Hospital Emergency Department with Chest Pain

Methods: The study population consisted of consecutive patients recruited over a 12 month period to the HARP Chest Pain pilot that met the recruitment criteria. 95patients were recruited as the 'case group', with 97 patients recruited as the 'control' group. Patients recruited included those that represented with Chest Pain within 6 months of a cardiac event, and those frequently attending hospital within 12 months (2 or more presentations) with Chest Pain and or complex needs.

The case patients were phone "coached" to support the patient to self manage their Chest Pain management (including cardiac education and a Chest Pain action plan), GP engagement, Medication compliance, risk factor modification and holistic assessment. Hospital utilisation information prior to and post their recruitment was obtained from Hospital administrative data and costs were obtained from the clinical costing unit. Following descriptive and univariate analysis, multivariate analysis was conducted to statistically adjust for noted differences between the case and control groups.

Results: The rate of re-presentations to ED within 30 days of index admission is significantly less for the case group (14.1%) when compared to the control group (27.7%). After adjusting for the Baseline differences we find that the case patients are more than 2 times less likely to have re-presentations than the control group (OR=0.44, p=0.049). After adjustment for baseline inpatient costs (i.e. during 6-month period prior to recruitment) and differences in baseline characteristics, the estimated reduction in inpatient costs for the case group was $1967 (95% CI: $4827 reduction to $893 increase) when compared to the control group, although this change was not statistically significant (p=0.177)

The service was well received by patients. Those contacted by the nurse appreciated the telephone phone calls that someone was available for to provide advice and support. A high proportion of patients reported modifying their behaviour as a result of the service; they had engaged with a GP, been encouraged to talk to someone about their mood, complied with their treatment plan and medications and felt more informed about managing their chest pain.

Conclusion:
A phone based integrated disease management program with targeted interventions can be highly effective in reducing hospital readmissions in a broad patient population with “Chest Pain”. This can lead to a reduction in re-presentations to ED and cost savings for the hospital. This study highlights the need for broader access to flexible programs addressing the frequent attenders to Hospital Emergency Departments.