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CONFERENCE ABSTRACT

Enabling Integrated Health and Care

16th International Conference on Integrated Care, Barcelona 23-25 May 2016

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Introduction: Adult patients who are very high intensity users (VHIU) of hospital emergency departments have complex medical and psychosocial needs. Their care is often poorly coordinated and expensive. Substantial health and social resources may be available to these patients but it is ineffective for a variety of reasons.

Description: In 2009 Counties Manukau District Health Board approved a business case for a programme designed to improve the care of VHIU patients identified at Middlemore Hospital, Auckland, New Zealand. We will describe attempts to systematically study the issue of frequent presenters at the Emergency Department (ED), and our plans to formally trial a targeted intervention whereby increasingly the process will be driven from primary care. Our main aim is to design systems that integrate secondary and primary care and thus reduce hospital use for people with long-term conditions.

The VHIU team was established to attend to the current presenting problems, however the main emphasis was on optimising ongoing care and reducing subsequent admissions especially by connecting patients with primary health care. The model of care includes medical and social review, a multidisciplinary planning approach with a designated 'navigator' and assertive follow-up, self and family management, and involvement of community-based organisations, primary care and secondary care. The model has been organised around geographic localities.

In New Zealand, the South Auckland region (population 500,000) has a multi-ethnic and socioeconomically deprived population. Hospital care is free. General practitioners (GPs) provide care from single or group private practices and they employ practice nurses. GPs are members of Primary Health Organisations. Practices receive a capitation fee from the Government but can also charge the patient a co-payment.

Key findings: The current definition of frequent presenter used at Middlemore Hospital includes any adult presenting to the ED on five or more occasions in the preceding twelve months.

In the year 2010, 64,409 patients presented to the ED 88,565 times. Of these, 1711 patients age 15 or over, in 8756 presentations, were 'flagged'. Of these presentations, (5312, 61%)

resulted in an overnight stay; total bed days for the year were 25,768, with a median per patient 10, interquartile range 4 to 23. The median age of those 1711 patients was 56 years (i.e., not frail elderly). According to the patient cost system, the total cost of flagged patients was approximately \$31.5million.

Since 2010 over 3000 patients have been enrolled in the VHIU programme. In a before and after comparison hospital use is substantially reduced – bed days decreased by 40% and attendance at ED by 43%. However concerns about regression to the mean led us to conduct a randomised controlled trial in 2011-2012. It was not possible to interpret the randomised controlled trial because of contamination of the control group. We suggest this is common in trials done in the setting of active clinical service delivery. Also such trials are difficult to “control”. The patients and interventions are complex (Hawe et al. Complex interventions: how “out of control” can a RCT be? *BMJ*, 2004; 328:1561-1563). As an alternative to the RCT we have done a time series analysis. In a cohort of over 1,000 patients enrolled in the calendar year 2013 hospital use for 12 months before has been compared to hospital use for 12 months after enrolment:

1. The difference in total bed days is significantly different from zero. Median 3 days. The mean absolute total bed day reduction is 1.1 days.
2. The slope of cumulative days in hospital for 12 months before is significantly different to the slope for 12 months after enrolment.
3. We used a mixed effects analysis of variance adjusted for total hospital days (on log scale), age, number of morbidities, ethnicity, gender – the ratio of bed-days before and after is 1.08 which indicates an 8% relative reduction (Barnett et al. Regression to the mean: what is it and how to deal with it. *International Journal of Epidemiology*, 2005; 34:215-220).

Highlights and Lessons Learned: We underestimated the degree of change required in general practice e.g., longer consultation, home visits etc. We describe a programme that incentivises this change.

At Risk individual programme (ARI) – General practitioners are asked to identify patients at risk of hospitalisation. The programme has started by targeting patients with long-term conditions. The District Health Board funds the GP for ARI enrolled patients. Elements of the programme include: 1) risk stratification, 2) holistic assessment (including psychosocial and self-management ability), 3) development of a care plan which is visible on an e-shared care record, 4) access to multidisciplinary care conferencing, and 5) a flexible funding pool which can be used to fund home visits, extended consultation etc.

Conclusion: Eighteen thousand patients have been enrolled in the first 9 months of the ARI programme. Funding has been used to increase practice nursing resource. Multidisciplinary Team meetings with allied health, specialists and social workers has started to produce clinical networks. Some of the new funding will be allocated on outcomes. The ARI programme is based on the VHIU model of care. If it has similar outcomes this “scaling up” will have substantial effect on hospital use.

Keywords: integrated health; primary care; secondary care; multidisciplinary care
