

## Supporting health journeys in Ireland and Australia: Preventing avoidable hospital use in complex systems

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**Context & Aim:** Potentially avoidable hospitalizations and emergency department attendances (PAH) are international phenomena of concern subject to various approaches, but commonly disease management. The patient journey record system (PaJR) implements a complex adaptive (CAS) person-centered holistic approach. Telecare guides (TCG)s regularly phone at risk individuals to track self-reported issues in order to address them in a timely manner. PaJR was initially validated in an Irish cohort with history of  $\geq 1$  PAH in 12 months. Monash Watch (MW) is a new service trialing PaJR within a DHHS Chronic Care Links (HLCC) Monash Health cohort. Patients with a history of  $\geq 3$  PAH in 12 months, are entered into the MW pilot service after an index admission or ED visit. This analysis compares self-reported risk profiles of MW (high risk hospital recruited) and Irish (lower risk primary care) cohorts to further evaluate the relevance of CAS biopsychosocial environmental approaches to PAH.

**Methods:** Telecare guides record call details in an online PaJR database which generates alerts for risk of deterioration, using algorithms validated in Ireland. Self-reported semi-structured calls from the MW (n=616) and Irish (n=616) pilots were analyzed using descriptive statistics, histograms, T-tests and regression. Variables include: concerns; self-rated health, worrying symptoms; and ongoing problems (alerts), and immediate risk patterns (red alerts) identified.

**Findings:** Concerns were raised in 238 (38%) MW calls and in Irish calls 308 (50%). Regarding physical

symptoms including breathlessness, pain, swelling etc. – MW 73% vs. 83% Irish calls were symptom free and patterns were significantly different with more pain and depression in the MW group. In 28% of MW calls and 25% of Irish calls, high risk profiles requiring medical attention within 24 hours were identified (no statistical significant difference). Self-rated health was similar in the two groups using the categorical scale (excellent to very poor) with no statistical difference. Statistically more psychosocial and environmental alerts were reported per call in the MW group (mean 2.7 per call, median 1, standard deviation 3.62, variance 13.09, skewness 1.84 and range 0-21) versus the Irish group (mean 0.45 per call, median 0, standard deviation 1.06, Sample variance 1.12, skewness 2.24 and range 4). These profiles were statistically significantly different and MW reduced bed days by 14% compared to control group. Irish ED visits plus admissions were reduced by 50%.

**Innovative Contribution to Policy, Practice and/or Research:** Despite very different settings and risk profiles, self-rated health and high risk disease symptoms that might require GP care were reported at very similar rates in MW and Irish cohorts, but comorbidities including pain, mental health, social and environmental concerns were more numerous and diverse in the Monash Watch Group with a higher PAH risk. The MW group had a broader range of problems with significantly more social and environmental problems of a non-urgent nature than the Irish group. Such profiles support a biopsychosocial and environmental approach beyond disease management in hospital avoidance schemes. Monash Watch aims to keep patients with chronic issues, healthier at home. Avoiding unnecessary hospital use, means addressing both medical problems, and psychosocial and living conditions which make health unstable.

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