CHRONIC KIDNEY DISEASE. CLINICAL EPIDEMIOLOGY - 1

EMAP: CKD - ELECTRONIC DIAGNOSIS AND MANAGEMENT ASSISTANCE TO PRIMARY CARE IN CHRONIC KIDNEY DISEASE IMPROVES IDENTIFICATION OF AT-RISK PATIENTS, TESTING, DIAGNOSIS AND THE MANAGEMENT OF CKD

Aspasia Pefanis1, Robyn G Langham2,3 and Craig L Nelson1,4
1Western Health, Dept of Nephrology, Melbourne, Australia, 2St Vincent’s Hospital, Dept of Nephrology, Melbourne, Australia, 3The University of Melbourne, Dept of Medicine, Melbourne, Australia, 4The University of Melbourne, North West Academic Centre, Melbourne, Australia

Introduction and Aims: The increasing burden of Chronic Kidney Disease (CKD) in Australia underpins the importance for improved early detection and management programs aiming to delay disease progression and reduce mortality rates. The role of primary care is paramount as 93% of CKD can be detected here. As 22% of Australian dialysis patients present late to specialist care and only 18% of patients with biochemical parameters of CKD are recognised as having CKD in primary care, a gap in best care delivery is apparent. Aimed at addressing this gap, eMAP:CKD was developed as a pilot program for primary care, the central feature being software management tools designed to integrate into existing primary care electronic health records (EHR) to support decision making in the identification, diagnosis and management of CKD.

Methods: The software programs (including PEN Clinical Systems Clinical Audit Tool and Sidebar) included decision assist tools in line with Kidney Health Australia’s (KHA) best practice recommendations. The software allowed real-time prompting for CKD risk factor identification, testing, diagnoses and management. The practice also received support from a visiting CKD nurse, education modules and regular feedback reports. Current patients were defined as those attending the practice in the previous 24 months. Recognition of CKD required entry of a diagnosis of CKD into the EHR. Patient data was analyzed at baseline and at 15 months using chi-square tests, with p < 0.05 significant. Data was analyzed for CKD risk factor identification, appropriate investigation and management as per KHA recommendations.

Results: At baseline, the 21 primary care practices had 150,910 current patients, increasing to 175,917 at 15 months. Over the 15 months, there was improved CKD risk factor recognition (29.40% vs. 33.84%; p < 0.001) (Fig 1) and more complete kidney health tests for CKD were performed (3.20% vs. 4.30%; p < 0.001). There was an improvement in the rate of entry of a diagnosis of CKD into the EHR at 15 months (0.48% vs. 1.55%; p < 0.001), a finding observed across all stages of CKD severity. Furthermore, an improvement in CKD patients achieving KHA recommended management targets was noted across the 15 month period (Fig 2).

Conclusions: The implementation of eMAP:CKD program significantly improved the identification of patients at-risk of CKD, appropriate testing and management of these patients, as well as an increase in diagnosis of CKD entered into the EHR over the 15 month study period. Despite this, only 13% of at-risk patients had appropriate testing performed and the documented diagnosis of CKD remains lower than expected from population studies, a possible feature of the short time frame of implementation thus far. A significant gap in best practice primary care for CKD has been identified. The eMAP:CKD program, introduced into a real-world environment, has demonstrated efficacy in helping to overcome this gap in care. The success of the pilot program has encouraging implications for use across the primary care community as a whole.