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## Extracting primary care records for prostate cancer patients in the CHHiP multicentre randomised control trial: A healthcare data linkage study

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### Introduction

The aim is to investigate the effect of cardiovascular and diabetes comorbidities on radiotherapy-related side-effects in prostate cancer. Previous research suggests that comorbidities increase the risk of side-effects, but some cardiovascular medications may reduce symptoms by protecting against radiation damage. The evidence is inconclusive and mechanisms are not fully understood.

### Objective

To explore whether routine primary care data can supplement clinical trial data in evaluating the impact of comorbidities and prescription medications on patient outcomes.

### Approach

The CHHiP radiotherapy trial (CRUK/06/16) recruited 3,216 prostate cancer patients from 71 centres in UK, Ireland, Switzerland, and New Zealand between 2002 and 2011. Baseline comorbidity and radiotherapy-related side-effects over time were recorded. This was linked to computerised medical records (CMRs) from the Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC) database. RCGP RSC is a network of 192 English general practices with over 2 million patients (2.8% of the population).

### Results

The English population of CHHiP patients (N=2811) was used. 120 CMRs were linked, which exceeded the estimation of 79 linked records. However, six CMRs showed no evidence of regular GP care and a further eight patients were not recruited into the CHHiP trial until after they had de-registered from an RCGP RSC practice.

Information on cardiovascular and diabetes comorbidities was extracted for 106 patients. The mean age was 69±7 years, representative of the CHHiP population. From the CMRs, 23

(22%) patients had diabetes and 47 (44%) had hypertension including 37 (35%) who took angiotensin converting enzyme (ACE) inhibitors (medications lowering blood pressure). In addition, 44 (41%) patients took aspirin, 65 (61%) statins (lowering blood lipids) and 14 (13%) took metformin (lowering blood sugar levels).

### Conclusion/Implications

The small sample limits statistical analysis. However, a clinical trial was successfully linked to GP data to determine comorbidities and medications of patients. This will serve as a pilot for further research. The advantage of data linkage is that it may provide a mechanism for long-term follow-up of radiotherapy-related side-effects.

