OMOP Based CKD Detection Algorithm

Tim Howcroft

Clinical Scientist

Timothy.Howcroft@lthtr.nhs.uk

NHS

Lancashire Teaching Hospitals

NHS Foundation Trust

Lancashire and South Cumbria

Secure Data Environment

Why?

- More than 1.8 million people in the UK have diagnosed chronic kidney disease (CKD)
- CKD's lack of prominence is costing lives, with late presentation occurring in 18% of patients starting dialysis
- Late presentation to a kidney specialist results in dialysis or surgery preparations being rushed, with an associated fivefold increase in treatment cost
- GP practices keep a list of patients with CKD, for monitoring and managing treatment

The Solution

- A simple, novel algorithm was co-developed with a nephrologist

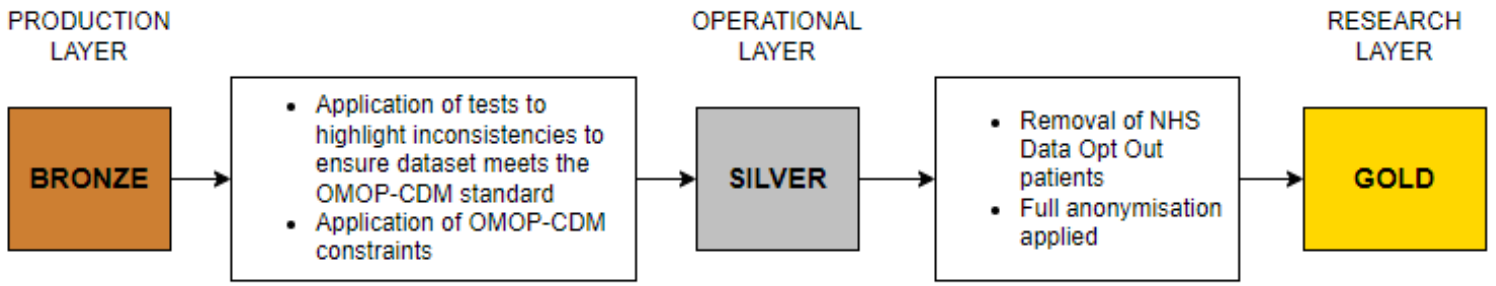
- Identifies if a patient has had an eGFR result <60 mL/min/1.73m^2 for >50% of the of the time in 4 different time periods (12 months, 18 months, 3 years, and 5 years)

- OMOP allowed all the data to be found in one place:
  - Demographics
  - eGFR
  - UACR
  - Renal Clinic Attendance

NHS Lancashire Teaching Hospitals NHS Foundation Trust

Lancashire and South Cumbria Secure Data Environment

The Process & Pipeline



- GPs send us their list of all patients and their list of CKD patients

- Run the algorithm on their patient results and identify two key groups of patients:
  - Unidentified CKD patients
  - CKD patients that should no longer be on the list

NHS Lancashire Teaching Hospitals NHS Foundation Trust

Lancashire and South Cumbria Secure Data Environment

Results & Conclusion

- Pilot GP Practice Results:
  - ~8000 registered patients, 425 patient CKD list
  - Algorithm identified 458 CKD patients
  - 317 appeared on both the GP list and new algorithm
  - 141 new patients and 127 patients that could possibly be removed
- We are working with two further GPs in the region to look at their data
- The list is currently used as a guide for GPs to and any addition or removal is done by a clinician and is not automated