Prescribing History to Identify Candidates for Chronic Condition Medication Adherence Promotion

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Study context

• New Zealand
  – Has high uptake of practice management system (PMS) software in general practice medicine
  – Local data include: electronic prescribing, lab test results review, problem lists, observations (e.g. BPs), practice notes

• Worked with West Fono Health Care
  – Pacific led practice in West Auckland
  – Iterative analysis of PMS data to identify opportunity for improvement in management of long-term conditions
Criteria model

- Abducted audit classes from general practice opportunities for quality improvement

**Unsustained Treatment**
Lapse, low **MPR** (medication possession ratio)

**Failure to Measure Outcome**

**Sustained Failure to Meet Target**

**Contra-indicated Treatment**
ChronoMedIt Architecture

1. Data Uptake App
2. Domain Ontology
3. Criteria Authoring App
4. Query Processor
5. Cohort Report, Case Report, Timeline Graph

Oral presentation (full paper) – MIE 2011, 28-31 August 2011

Warren
Visualisation: Bad pattern, low MPR
Uses

• ChronoMedIt analysis of PMS data provides a basis for
  – Research cohort identification (how do low and high MPR groups differ?)
  – Intervention cohort identification (follow up to raise MPR)
  – Tracking of progress over time and variation between sites
  – Interactive decision support
Protocol

• **Objective.** Assess how well one year’s low MPR (<80%)

• **Cohort.** Patients with antihypertensive prescription

  (83%; 10% NZ Maori, 2% Pacific)

• **Measures.** Prescription based antihypertensive activity with the practice in ‘after’ period (2009)

• **Measures.** Prescription based antihypertensive medication possession ratio (MPR) in 2008 and 2009; PPV and NPV of MPR<80% in ‘before’ for MPR<80% in ‘after’
Results

• Included patients (active 2008 and 2009)
  – 674 (Pacific practice), 801 (other practice)

• Low MPR prevalence
  – 52% (Pacific practice), 28% (other practice)

• Prediction accuracy (2008 for 2009)
  – Pacific practice: PPV 72%, NPV 62%
  – Other practice: PPV 61%, NPV 82%

• Value?
  – FP 28% vs 48% (Pacific), 39% vs 72% (other)
Conclusion

• Adherence to long-term medication is an enormous gap in chronic condition management

• Can be assessed by local data in environments with electronic prescribing

• Previous year MPR helpful to better target adherence promotion efforts (but substantial FP / FN rates)
  – May suit a multi-modal reminder/promotion strategy (SMS, web survey, nurse phone, physician consult)
Questions / further info

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  – Also, try PubMed on ‘Mabotuwana’