Using Health Informatics for Pharmacoepidemiologic Research in Australia

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Summary

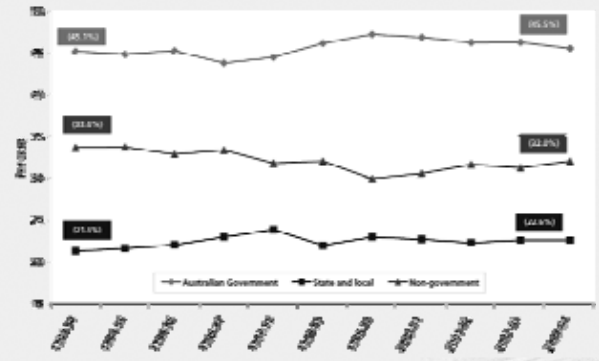
- Brief overview of pharmaceuticals system in Australia
- In an 'ideal' world!!
- Reality of electronic data to support pharmacoepidemiology research in Australia
- Examples of use
- Future – how to progress?

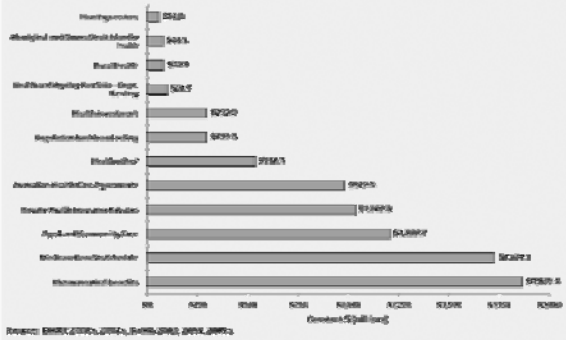
Australia's Pharmaceutical Benefits Scheme (PBS)

- National
- Covers everyone (govt cost about $6 billion p.a.)
- Copayment (currently $30.70 or $4.90, safety net applies)
- Now includes Medicare number to check for eligibility (since 2002)
- Majority of Australia's prescription medicine sales are for drugs covered by PBS

Medical Benefits Scheme (MBS), Hospitals in Australia

- MBS covers doctors visits, pathology, procedures etc etc – national
- Hospitals in Australia are either private (about half of procedures) or State hospitals (not national). Procedures and a proportion of private doctor costs are covered by MBS in hospital.
- Discharge medications are slowly becoming PBS – not all yet.

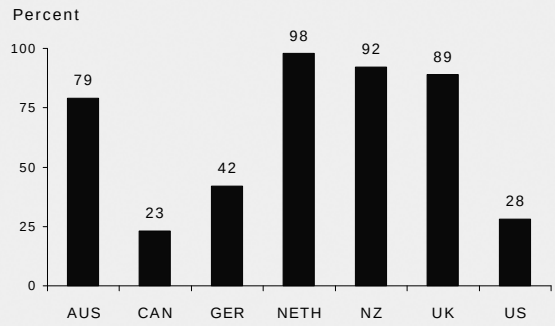




Adoption of IT in Australia

- Pharmacies in Australia have long been computerised …….. One 'insurer' (PBS) electronic submissions of claims for payment for over 20 years. 'Stand alone' computer systems
- General practitioners were paid (nationally) to computerise. IT support provided through GP Divisions. 'Stand alone' computer systems
- More recently 'Broadband for Health'

Figure 1. Primary Care Doctors' Use of Electronic Patient Medical Records, 2006



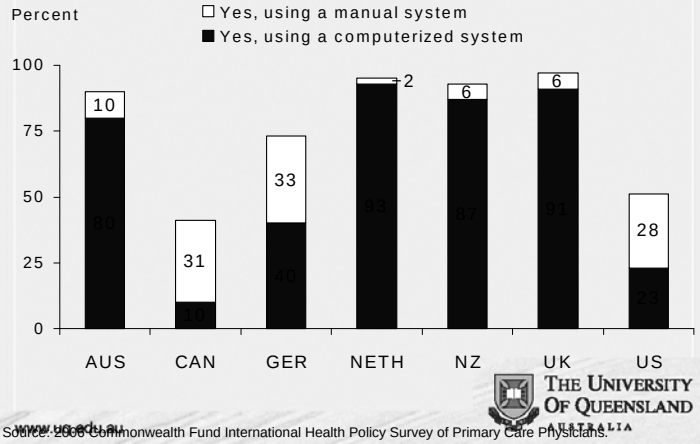
Source: 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

Figure 3. Practice Use of Electronic Technology

Percent reporting routine use of:	AUS	CAN					
Electronic ordering of tests	65	8					
Electronic prescribing of medication	81	11					
Electronic access to patients' test results	76	27					
Electronic access to patients' hospital records	12	15					

Source: 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

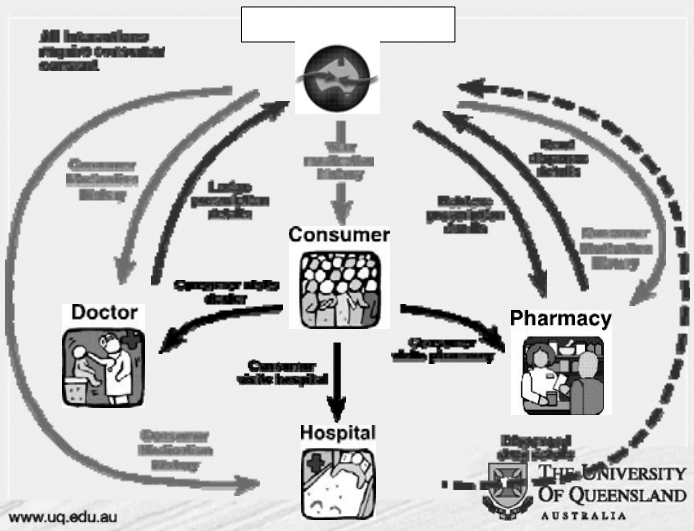
Figure 4. Doctor Routinely Receives Alert About Potential Problem with Drug Dose/Interaction



Source: 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

In an 'ideal' world then ….

- Why can't we link
  - Across GPs
  - Across GPs and pharmacists
  - At least for medications??
- Ministerial Committee – advice for IT; then to MediConnect (as first part of HealthConnect)



MediConnect back into HealthConnect

- MediConnect trials, evaluations – but never went to implementation (change management issues identified)
- Now back into HealthConnect – Electronic Health Records
- National Electronic Health Transition Authority

National databases

- Pharmaceutical Benefits Scheme – administrative data for all reimbursed pharmaceutical claims (covers most drugs in Australia and all residents of Australia)
  - Limitations, does not capture below co-payment medicines (will do from July this year); is not linked to other data (eg. clinical); does not allow for primary or secondary compliance
- Medical Benefits Scheme – administrative data, point of care claiming or reimbursement to consumer
  - Limitations, does not capture private insured items; is not linked to other data (eg. hospitals)

National data (cont.)

- BEACH dataset
  - Still a 'process' indicator (rather than outcome) – content of GP-patient encounters, problems managed, treatments given
  - Randomly selected GPs (about 1000 each year (30% response rate from those contactable)) recording data from 100 consecutive encounters (GP gains 'points' towards vocational registration)
- National Health Survey
  - Self report, structured interview. Population prevalence of certain conditions and what consumer reports about GP visits and medication in previous 2 weeks.

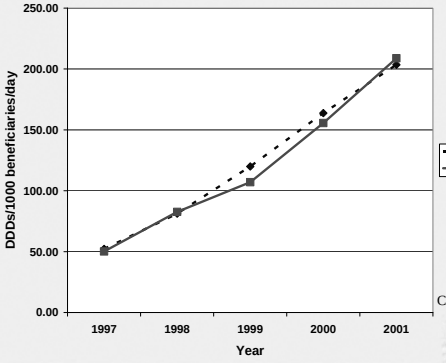
State databases

- Hospitals
  - State based; some more 'central' than others; often incompatable IT (although improving); central ordering (eg. PDAs) becoming more common; PBS being implemented in hospitals
- Some community health services

Back to pharmacoepidemiologic research

- The best database for us to use currently is PBS database, recognising the limitations …
- National data can be accessed over internet, State data/ postcode data/ some data by age groups can be purchased from Medicare Australia …..
- Data accessed as number of 'services' (usually a month supply) over specified time …. Easy to convert into Defined Daily Doses …. Can then normalise for population (eg. per 1000 people) and for time (eg. per day)

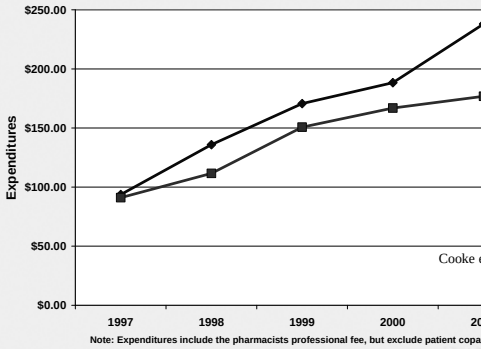
Examples – what we can do – International Comparisons



Statin group of drugs

Cooke et al. Clin Ther 2005:27:497-508

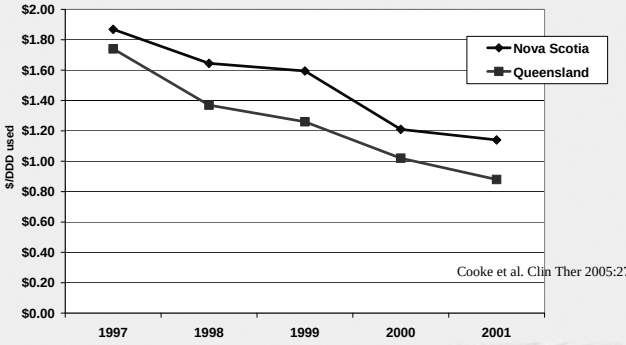
Expenditures/1000 beneficiaries/day, NS and Queensland, 1997-2001 (CDN dollars)



Cooke et al. Clin Ther 2005:27:497-508

Note: Expenditures include the pharmacists professional fee, but exclude patient copayments

Expenditures per DDD used, Nova Scotia and Queensland, 1997-2001 (CDN dollars)



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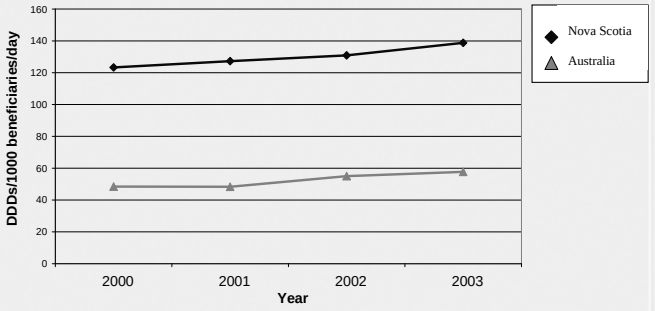
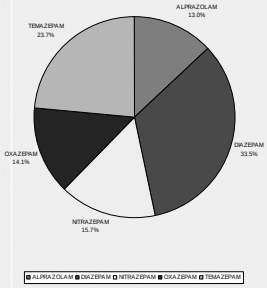
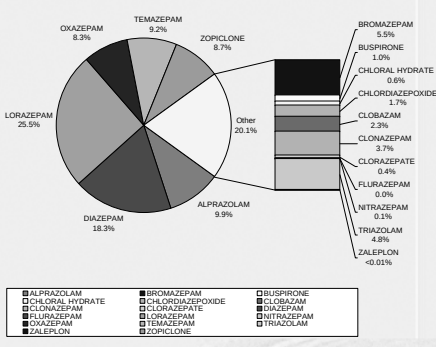


However, look at benzodiazepine use ……. (poster at this conference)

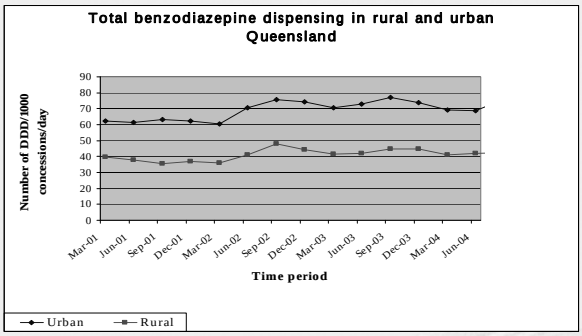
Australia



Nova Scotia



Other example – rural vs urban comparisons



The future – where would we like to go for pharmacoepidemiologic research?

- Electronic data linkage to outcomes
- Electronic data linkage for covariates and possible confounders
- Evaluation of interventions designed to change practice – monitoring of health outcomes (qualitative (national recording) and quantitative (national, not fragmented)
- Facilitation of international comparisons to learn from 'best practice'

What could we do with better use of health information technology?

- Lowering health spending
- Improving quality
  - Both above points have also been argued against
- Improve 'value for money'
- Information exchange within a sector and between sectors

- Health IT encompasses electronic health record, plus other services – telehealth, electronic ordering systems, decision support tools etc. Ideal – integrated national IT system for health

Anderson et al. Health care spending and use of IT in OECD countries. Health Affairs 2006:25:819-31
Sidorov. The EHR and the unlikely prospect of reducing health care costs. Health Affairs 2006:25:1079-85

Can we get to ….

- National, integrated IT system across all sectors of care …. Focussed just on the patient??

Acknowledgements

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