Quality indicators and quality use of medicine in residential aged care

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Overview

› Why measure prescribing quality in aged care
› Dimensions of prescribing quality
› Tools for measuring quality in aged care
  - Drug specific indicators
  - Disease specific indicators
› Challenges in measuring prescribing quality in dementia
Why look at medicines in residential aged care?

› Older adults are the largest consumers of medicines

› Aged care population at an increased risk of medication misadventure
  - Increased disease burden
  - Increased frailty
  - Increased number of medications


Understanding prescribing quality can help us

- Appreciate and recognise the complexity of care
- Investigate the translation of evidence into practice and real life
- Understand the factors that drive quality care of older people
- Support innovation to improve practice
Prescribing provides insight into

› the *systems and structures* surrounding drug use
  - e.g. how drugs are ordered, delivered and administered in a hospital or health care facility
› the *processes* of drug use
  - e.g. what drugs are used and how they are used and does their use comply with the relevant criteria, guidelines or restrictions
› the *outcomes* of drug use
  - e.g. efficacy, adverse drug reactions and the use of resources such as drugs, laboratory tests, hospital beds or procedures.

3. World Health Organization. Introduction to drug utilization research

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Prescribing in residential aged care

› Many reasons for measuring prescribing quality
  - Identification of problems
  - Quality improvement
  - Budget allocation and cost containment
  - Performance measure (KPIs)
  - ? Fee for payment (UK, NL)

› Reason for assessing prescribing impacts the data and methods chosen.
Dimensions of prescribing quality

- Prescribing is multi-dimensional
  - Safety
  - Efficacy
  - Therapeutic need
  - Cost

- Dimensions are often inter-related

How can we measure prescribing quality

- Individual patient assessment/ audit
  - Need extensive data
  - Resource intensive
  - Not practical on a routine basis
  - Limited to “projects”

- Indicators using administrative data
  - Medical records
  - GP records
  - Pharmacy records
  - Reimbursement records (PBS)
Drug specific prescribing indicators

› % of patients prescribed a benzodiazepine
  - Lack clinical data
  - Irrespective indication
  - focus on drug choice
  - dosage
  - drug combinations
  - generally use with prescription-only data

Explicit lists

› “Drugs and combinations to avoid”

› Beers criteria (USA)
  - Eg % of patients 65 years of age and older who received at least one high-risk medication

› STOPP criteria (Europe)
  - 65 drug-oriented indicators
  - designed as a clinician decision-making tool
  - role as a prescribing quality indicator needs validation
  - % patients with regular opiates for more than 2 weeks in those with chronic constipation without concurrent use of laxatives

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ACOVE
(Assessing Care of Vulnerable Elders)

- Developed to improve and monitor the quality of care for the vulnerable elderly.  
- 24 medication related indicators
  - 10 focusing on medication safety,
  - 8 on medications that should be avoided
  - 2 with NSAID and aspirin side effects.
- These indicators overlap strongly with both the Beers and STOPP lists.


Drug Burden Index (DBI)

- Measure of anticholinergic/ sedative load
- Weights for drug choice and dose
- higher DBI score associated with poorer physical and cognitive functioning in the elderly


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Disease specific prescribing indicators

- Quality of prescribing in relation to the condition for which they are being prescribed.
- Focus is on the clinical need for therapy and the extent to which treatment complies with the therapeutic need.

A number of disease-oriented indicators for the elderly exist.
- Mainly focus on medication safety
  - Use of contraindicated or "sub-optimal choice" drugs
  - Eg use of NSAIDs for arthritis in patients > 65 years who have not tried paracetamol.
- Indicator sets often contain a combination of drug-oriented and disease-oriented indicators.

Most residents have complex comorbidities

Each resident has their own GP

Different data sources have different strengths and weaknesses

Most datasets only include prescribed medicines
  - Half of all potential drug-drug interactions involved non-prescription medicines.⁹

Need for new data sources that include ALL medicines

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Design: Cross-sectional survey
Setting: 27 aged care facilities in greater Sydney
Data source: Dose administration-aid packing data
Population: All residents who received a medicine or pharmacy items during the defined study period
Study period: defined per research question
### Results: Cohort Demographics (2009/10)

<table>
<thead>
<tr>
<th></th>
<th>High care (n=1600)</th>
<th>Low Care (n=934)</th>
<th>Total (n=2535)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total residents (n)</strong></td>
<td>1600</td>
<td>934</td>
<td>2535</td>
</tr>
<tr>
<td><strong>Age at start of study period mean, (SD)</strong></td>
<td>85.79 (7.57)</td>
<td>85.28 (6.84)</td>
<td>85.59 (7.29)</td>
</tr>
<tr>
<td><strong>Percentage female</strong></td>
<td>69.06% (n=1105)</td>
<td>69.38% (n=648)</td>
<td>69.21% (n=1789)</td>
</tr>
<tr>
<td><strong>Average length of stay (months)</strong></td>
<td>32.39</td>
<td>29.63</td>
<td>31.39</td>
</tr>
<tr>
<td><strong>Average number of all medicines</strong></td>
<td>15.18</td>
<td>14.72</td>
<td>14.94</td>
</tr>
<tr>
<td><strong>Average number of OTC medicines per patient</strong></td>
<td>5.94</td>
<td>5.46</td>
<td>5.74</td>
</tr>
</tbody>
</table>

* Care level not defined (n=51)

### How much OTC use is there?

**Figure 1: Residents receiving OTC medications**

- Any Pharmaceutical: 92%
- No medicine: 8%
- OTC: 98%
- No OTC: 2%

N=2585
N=2377
Pain management
laxatives in opioid users

- Softeners, emollients (A06AA)
- Contact laxatives (A06AB)
- Bulk producers (A06AC)
- Osmotically acting laxatives (A06AD)
- Enemas (A06AG)

Percentage of opioid users

Laxative subgroup
Management of osteoporosis

![Graph showing prevalence of different osteoporosis treatments](image)

Antipsychotic use

![Graph showing prevalence of different antipsychotic medications in Australia and The Netherlands](image)
Issues with the use of prescribing indicators in aged care

› Context specificity
  - Explicit criteria eg Beers list limited in international applicability
  - Eg use of quinolones (ciprofloxacin) an issue in Europe and US but not in Australia due to PBS restrictions

› Feasibility
  - Routinely conducted and easily accessible data collection
  - Limited burden on staff, organization and patients
  - drug-oriented indicators have a higher feasibility than disease-oriented indicator
  - due to easy access to prescription records
Indicator validity

› Lack of validity information
  - Generally face or content validity assessed

› Limited concurrent or predictive validity information
  - *Explicit criteria* associated with **hospitalisations, QoL** and adverse reactions \(^{10}\)
  - *STOPP criteria* **adverse events** \(^{11}\)
  - **DBI** associated functional decline \(^{12}\)

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Measuring prescribing quality in dementia care

Lack of dementia specific tools for measuring prescribing quality
  - International differences in choice of psychoactive medications
  - Lack of knowledge regarding optimal medication management
  - Therapeutic needs of dementia patients differ from other aspects of aged care

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Antidepressant use by dementia patients

› Depression most common psychiatric disorder in residential aged care
› Difficult to diagnose and manage as comorbidity in dementia
› Pharmacotherapy can have a significant impact on QoL
› Concerns regarding\(^\text{13}\)
  - Efficacy
  - Adverse effects
  - Choice of agent
  - Over and under treatment

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Antidepressant use in individuals with dementia in residential aged care

› Secondary analysis
› Data from the PerCEN study
  - 601 consented residents over 60 years with dementia
  - 38 residential aged care facilities

› Focus on:
  - Choice of agent
  - Under-treatment
  - Predictors of use
**Choice of antidepressant**

![Graph showing the percentage of antidepressant users by type]

**Antidepressant use and depression severity**

<table>
<thead>
<tr>
<th>Cornell Scale for depression</th>
<th>Antidepressant use</th>
<th>No antidepressant (n=419)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence of depression (scores 0-5)</td>
<td>35</td>
<td>110</td>
<td>135</td>
</tr>
<tr>
<td>Minor depression (scores 6-10)</td>
<td>54</td>
<td>146</td>
<td>200</td>
</tr>
<tr>
<td>Mild depression (scores 11-18)</td>
<td>70</td>
<td>116</td>
<td>186</td>
</tr>
<tr>
<td>Definite depression (scores above 18)</td>
<td>23</td>
<td>47</td>
<td>70</td>
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<tr>
<td></td>
<td>Antidepressant (n=182)</td>
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<td>35</td>
</tr>
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Challenges in measuring prescribing quality in dementia care

› Limited data on medication utilization
  - Risks versus benefits
› Lack of suitable tools for measuring prescribing quality
  - Validity of current indicators unknown
› Disease specific methods most reliable yet lack of disease specific indicators
  - Issues around data collection
Quality Use of Medicines in dementia care requires development of valid, reliable and feasible indicators for routinely assessing prescribing quality.

Watch this space……………

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