Is there a need for a new prescription screening tool in internal medicine?

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University Hospitals of Geneva

Seminar M1
Wednesday, 25 March 2015 - 2:00pm to 3:30pm
Thursday, 26 March 2015 - 9:00am to 10:30am
Nothing to disclose

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Inappropriate drug use largely studied in elderly

- Polymorbidity
- Polymedication
- Frailty

http://www.ch-chauny.fr/geriatrie
Are the middle-aged internal medicine patients so different?

- Better homeostasis
- Higher drug tolerance
- Longer life expectancy
- Preserved independency
- Polymorbidity
- Polymedication

Drugs related problems
- Drug interaction
- Subtherapeutic dosage
- Overdosage
- Drug use without indication
- Untreated indication
- Improper drug selection
- Adverse drug reaction
- Failure to receive drugs

Can we use geriatric tools for younger patients?

<table>
<thead>
<tr>
<th>Conditions addressed by geriatric tools</th>
<th>Conditions met in patients of internal medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding risk</td>
<td>Myocardial infarction</td>
</tr>
<tr>
<td>Hypoglycaemia</td>
<td>Heart failure</td>
</tr>
<tr>
<td>Risk of fall</td>
<td>Atrial fibrillation</td>
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<tr>
<td>Urinary retention</td>
<td>COPD</td>
</tr>
<tr>
<td>Dementia, delirium</td>
<td>Diabetes</td>
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<tr>
<td></td>
<td>Obesity</td>
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<td></td>
<td>Contraception</td>
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<td></td>
<td>Infectious diseases</td>
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<td></td>
<td>Transplantation</td>
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<tr>
<td></td>
<td>Renal failure</td>
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<tr>
<td></td>
<td>Addictions</td>
</tr>
<tr>
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<td>Neuropathic pain</td>
</tr>
</tbody>
</table>
Is there a need for a new tool?
How would this tool be designed?
A new clinical pharmacy activity to detect DRPs in internal medicine

1) Most frequent drug related problems (DRPs)
2) Drugs or drug classes concerned
3) Clinical relevance for each DRP
4) Rates of acceptance and practical application
5) DRPs for which prescribers need most support
Setting and design

2000 beds

2 x 15 beds

2 wards (internal medicine)
Number of visits:
1 day every 2 weeks

Inclusion criteria
All inpatients of the ward
(circa 15 patients per visit)

6 months
Method

• Review of medical charts and analysis of prescriptions with an assessment grid
  – Drug interactions
  – Untreated indication (underuse)
  – No valid indication (overuse)
  – Improper drug selection
  – Subtherapeutic dosage
  – Overdosage
  – Adverse drug reactions

• Determination of clinical relevance

• Interventions during medical round

• Follow-up of application of the suggestions
Results

• 145 patients
  – Median age: 69 years (min 21 – max 99)
    • < 75 years: 61%
  – Male: 52% - Female: 48%

• 1523 lines of prescription
  – Mean prescriptions/patient: 10 (min 0 – max 21)

• 383 drug related problems (DRP)
  – Mean number DRP/patient: 3 (min 0 – max 12)
(1) Drug Related Problems

- Drug interactions: 21%
- Untreated indication: 18%
- Overdosage: 16%
- No valid indication: 10%
- Adverse drug reactions: 10%
- Subtherapeutic dosage: 9%
- Improper drug selection: 8%
- Others: 8%

Effect of age: NS
Therapeutic inertia

• A newly identified phenomenon defined as:
  – Reluctance of healthcare professionals to start or to intensify any treatment for an existing medical condition

• Commonly observed in:
  – Hypertension
  – Diabetes
  – Heart failure
  – Secondary prevention of stroke

(1) Drug-Related Problems

Interaction screening App

- STOPP-like criteria
  - Untreated indication
  - Overdosage
  - No valid indication
  - Adverse drug reactions
  - Subtherapeutic dosage
  - Improper drug selection

- START-like criteria

Ratio conserved across all age categories
Conclusion 1
An inverted ratio (START > STOPP) should characterize a tool for internal medicine. Some drug interactions should also be addressed.
## (2) Involved Drugs or Drug classes

<table>
<thead>
<tr>
<th>Drug interactions</th>
<th>Tramadol Metoprolol</th>
<th>Antidepressants Clopidogrel</th>
<th>Acenocoumarol</th>
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<td>Untreated indication</td>
<td>Heparin ACEI/sartans</td>
<td>Statins Metformin</td>
<td>Aspirin Beta-blockers</td>
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<td>Proton pump inhibitors</td>
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<td>Paracetamol</td>
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<td>Aminoglycosids</td>
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Conclusion 2

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These drugs

These conditions

Hypertension
Post-MI
Heart failure
Atrial fibrillation
Diabetes
Psychiatry
Alcoholism
Gastric ulcer prevention

should be integrated in a prescription screening tool for internal medicine.
(3) Types of Interventions

Conclusion 3
A prescription screening tool is only a check-list and doesn’t replace clinical expertise.

(4) Acceptance

Conclusion 4
To increase adherence of prescribers, relevant references should be joined to the various criteria of a prescription screening tool.
Conclusion 5

Untreated indication (omission) is the less recognized DRP by prescribers. Therefore, a prescription screening tool with START-like criteria would have a significant impact.
Take home messages

• Untreated indications twice more frequent than drugs with no valid indication
• The ideal prescription screening tool:
  – Motre “START” than “STOPP”
  – Integrating medication and conditions of internal medicine
• BUT doesn’t replace clinical jugement