



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

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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

### TOOLS

- Beer's
- IPET
- MAI
- ACOVE
- STOPP/START



<http://www.ch-chauny.fr/geriatrie>

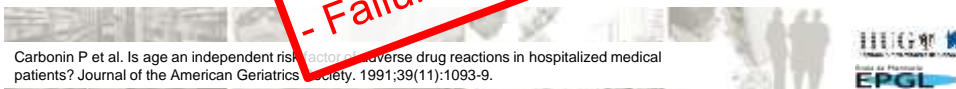


## Are the middle-aged inpatients of internal medicine so different?

- Better homeostasis
- Higher drug tolerance
- Longer life expectancy
- Preserved independence

### Drug related problems

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



Carbonin P et al. Is age an independent risk factor of adverse drug reactions in hospitalized medical patients? Journal of the American Geriatrics Society. 1991;39(11):1093-9.



## Can we use geriatric tools for younger patients?

Conditions addressed by geriatric tools	Conditions met in patients of internal medicine
<ul style="list-style-type: none"> <li>• Bleeding risk</li> <li>• Hypoglycaemia</li> <li>• Risk of fall</li> <li>• Urinary retention</li> <li>• Dementia, delirium</li> </ul>	<ul style="list-style-type: none"> <li>• Myocardial infarction</li> <li>• Heart failure</li> <li>• Atrial fibrillation</li> <li>• COPD</li> <li>• Diabetes</li> <li>• Obesity</li> <li>• Contraception</li> <li>• Infectious diseases</li> <li>• Transplantation</li> <li>• Renal failure</li> <li>• Addictions</li> <li>• Neuropathic pain</li> </ul>

Levy HB, Marcus EL, Christen C. Beyond the beers criteria: A comparative overview of explicit criteria. The Annals of pharmacotherapy. 2010;44(12):1968-75.



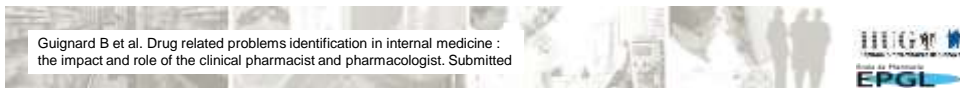
## Is there a need for a new tool?

## How would this tool be designed?

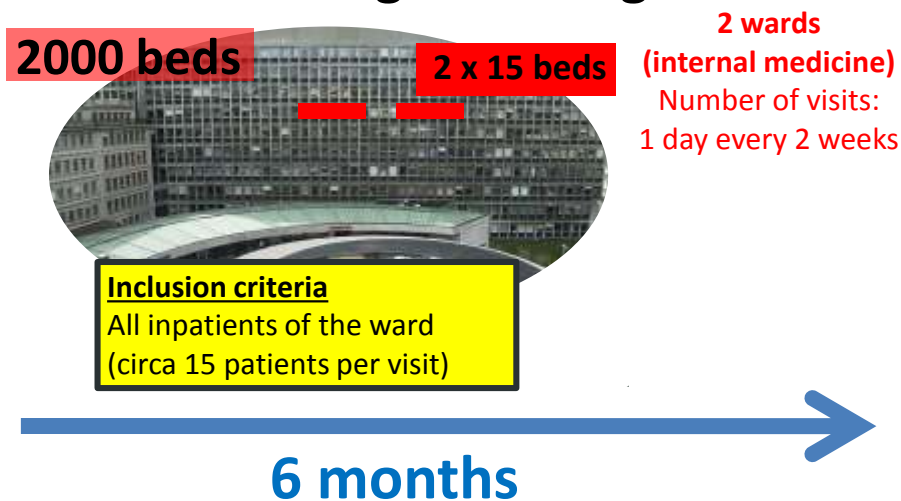


## A new clinical pharmacy activity to detect DRPs in internal medicine

- 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



## 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

**J-1 OFFICE**

**J0 WARD**

**J5 OFFICE**

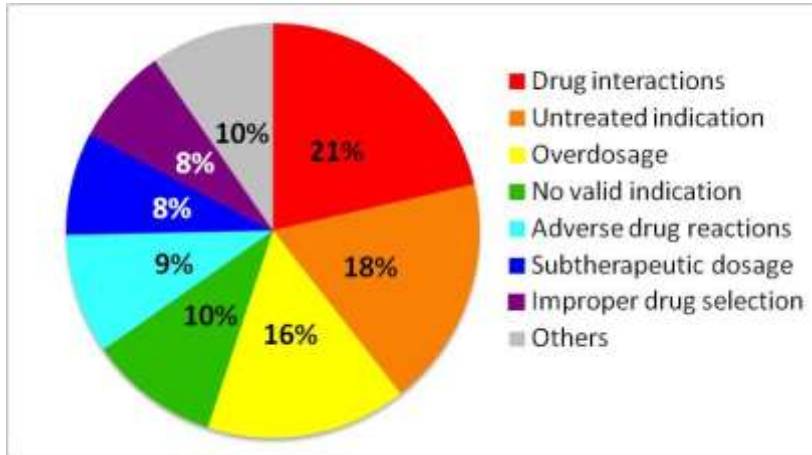


## Results

- 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)

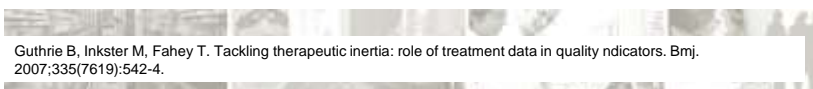


## (1) Drug Related Problems



## 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

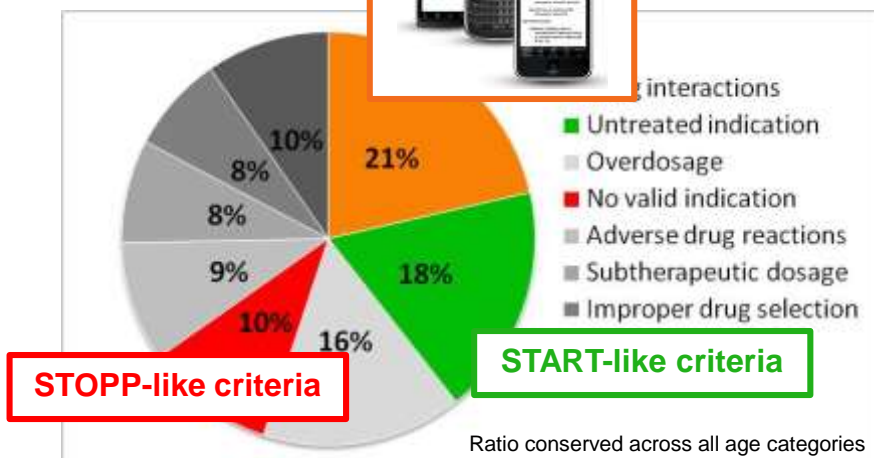


Guthrie B, Inkster M, Fahey T. Tackling therapeutic inertia: role of treatment data in quality indicators. *Bmj*. 2007;335(7619):542-4.



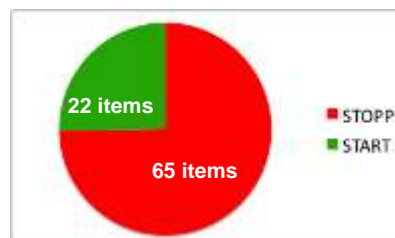
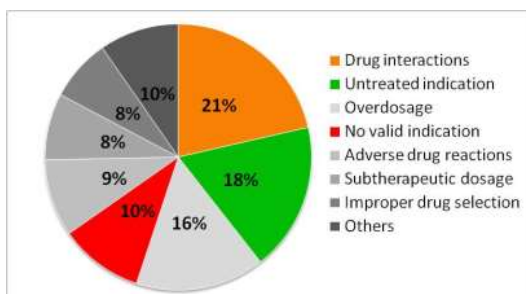
## (1) Drug problems

Interaction screening App



### Conclusion 1

An inversed ratio (START > STOPP) should characterize a tool for internal medicine.  
Some drug interactions should also be addressed.





## (2) Involved Drugs or Drug classes

Drug interactions	Tramadol Metoprolol	Antidepressants Clopidogrel	Acenocoumarol
Untreated indication	Heparin ACEI/sartans	Statins Metformin	Aspirin Beta-blockers
Overdosage	Proton pump inhibitors		Paracetamol
No valid indication	Proton pump inhibitors		Aspirin
Adverse drug reactions	Neuroleptics		Anticoagulants
Subtherapeutic dosage	Paracetamol Opioids	Aminoglycosids	Beta-blockers ACEI/sartans
Improper drug selection	Antihypertensives		Opioids

### Conclusion 2

Drug interactions	Tramadol Metoprolol	Antidepressants Clopidogrel	Acenocoumarol
Untreated indication	Heparin ACEI/sartans	Statins Metformin	Aspirin Beta-blockers
Overdosage	Proton pump inhibitors		Paracetamol
No valid indication	Proton pump inhibitors		Aspirin
Adverse drug reactions	Neuroleptics		Anticoagulants
Subtherapeutic dosage	Paracetamol Opioids	Aminoglycosids	Beta-blockers ACEI/sartans
Improper drug selection	Antihypertensives		Opioids

Hypertension

Post-MI

Heart failure

Atrial fibrillation

Diabetes

Psychiatry

Alcoholism

Gastric ulcer prevention

These drugs  
These conditions

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) Accept

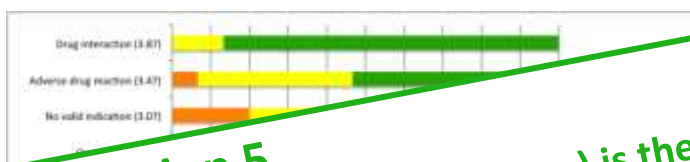
#### Conclusion 4

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

### (5) DRPs for which support is most needed

#### Conclusion 5

Untreated indication (ommission) 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:
  - More “START” than “STOPP”
  - Integrating medication and conditions of internal medicine
  - Relevant references with criteria
- BUT doesn't replace clinical judgement

