

**Supplementary File A:  
Establishing interprofessional medication reviews in home care patients – a feasibility study  
(doMESTIC RedPIM)**

## **The doMESTIC Risk Assessment Tool 2021, Version 03**

### **Background and aim**

The doMESTIC RISK Assessment Tool is used to identify vulnerable patients at high risk of medication-related problems. These patients have their medications reviewed regularly, every 6–9 months, and the review is discussed with a pharmacist and/or a primary care physician.

### **Application**

1. Start condition:  
Patients who are 64 or older and from whom a home-care organisation provides medication management.
2. Filling out the risk assessment tool  
Responsible nurse or home-care case manager and pharmacist (home-care or community)
3. Risk tool's assessment:  
Score of less than 5: No fundamental need for action;  
Medication review by the home care organisation;  
Medication review by a pharmacist upon request by a nurse.  
Score of 5 or more: Urgent recommendation for a medication review by a pharmacist.

Pharmacist's contact information:

Name, first name: \_\_\_\_\_  
Email: \_\_\_\_\_  
Phone: \_\_\_\_\_

4. Interprofessional discussion of the results and decision for further action.

### **Abbreviations used**

**e.g.** for example  
**DOACs** Direct Oral Anticoagulants  
**GFR** Glomerular Filtration Rate  
**PRN:** as needed  
**Original:** Original (not generic) drug product

### **Terms used**

**Immediate:** The time between the patient's discharge from an inpatient institution and when their medication list, which may have been changed, was verified and approved by their primary care physician.  
**Substance:** Drug substance/active ingredient  
**Class:** Pharmacologically similar drugs  
**Patients:** Patients/clients

## doMESTIC Risk Tool Version 3.0

<b>Patient name:</b>		<b>Nurse:</b>	
<b>Date of birth:</b>		<b>Home-care team:</b>	

No.	Risk factor	Score	Forward	Result
1	Related to the home environment in combination with cognitive problems or a lack of social support	1 point	<input type="checkbox"/>	
2	Changing prescribers or several prescribers at the same time (hospital, rehab, general practitioner, specialist)	2 points	<input type="checkbox"/>	
3	Immediate transfer from hospital to home care	1 point	<input type="checkbox"/>	
4	Renal dysfunction GFR < 30 ml/min	2 points	<input type="checkbox"/>	
5	Number of drugs ≥ 7 (incl. PRN medication)	2 points	<input type="checkbox"/>	
6	High-risk medications/groups of medications and/or medications with a narrow therapeutic range (neuroleptics, especially lithium; digoxin, amiodarone, and other antiarrhythmics; and antiepileptics but especially phenytoin, phenobarbital, carbamazepine; oral anticoagulants but especially Vitamin K antagonists, DOACs; insulins; methotrexate; theophylline)  and/or  ≥ 3 drugs with effects on the central nervous system. (centrally acting analgesics; antipsychotics; antidepressants; benzodiazepines)	1 point	<input type="checkbox"/>	
7	Medications that are unsuitable for older adult patients (e.g. Priscus® list).	3 points	<input type="checkbox"/>	
8	Double prescription of a substance (e.g. generic and original) or class	3 points	<input type="checkbox"/>	
9	Patient lacks an understanding of their therapy and/or illness (cognition and/or comprehension problems, e.g. foreign language, hearing impairment)	1 point	<input type="checkbox"/>	
10	Non-adherence/lack of compliance (e.g. incorrect intake due to not understanding the therapy)  and/or  Patient takes medication without doctor's knowledge (also self-purchased)	1 point	<input type="checkbox"/>	
	<b>Total risk score</b>			

<b>Remarks/Notes/Observations</b>

Guideline for conducting a structured medication analysis in the home care sector with an action plan (translated with the help of [www.deepl.com](http://www.deepl.com))

Step	Key question	Checklist (to tick off the steps carried out)	Aids
1. Documents	Are all documents available?	<input type="checkbox"/> Required documents: medication list, diagnosis list, laboratory values, vital parameters <input type="checkbox"/> Additional documents: reports, assessments <input type="checkbox"/> Medication reconciliation: recommended if: old medication list, hospital discharge and/or $\geq 2$ prescribers	Therapy guidelines: <ul style="list-style-type: none"> <li>• SURF-med (book)</li> <li>• <a href="http://www.awmf.org">www.awmf.org</a></li> <li>• <a href="http://www.akdae.de">www.akdae.de</a></li> <li>• <a href="http://www.msmanuals.com/de">www.msmanuals.com/de</a></li> <li>• <a href="http://www.nhs.uk">www.nhs.uk</a></li> </ul>
2. Indication	Does every diagnosis have a therapy?	<input type="checkbox"/> Under-treatment: missing diagnoses and diagnoses without therapy <input type="checkbox"/> Over-treatment: therapy without diagnosis and duplication	
3. Administration	Are the dosage, intake interval, time, dosage form and duration of therapy appropriate?	<input type="checkbox"/> Dosing: appropriate and adapted to risk factors (see Safety) <input type="checkbox"/> Simplification: interval, time, dosage form, whole tablets if possible, medical aids <input type="checkbox"/> Time: adapted to meals, circadian rhythm and risk of ADRs <sup>A</sup> <input type="checkbox"/> Duration: chronic, temporary or on demand	Dosage and risk calculator: <ul style="list-style-type: none"> <li>• Opiates: <a href="http://www.usb.x-service.ch">www.usb.x-service.ch</a></li> <li>• GFR<sup>2</sup>: <a href="http://www.dosing.de">www.dosing.de</a></li> <li>• QT time: <a href="http://www.qtdrugs.org">www.qtdrugs.org</a></li> <li>• Various: <a href="http://www.mdcalc.com">www.mdcalc.com</a></li> </ul>
4. Safety	Is there an increased risk of ADRs ? <sup>A</sup>	<input type="checkbox"/> Risk factors: Age, diagnoses, allergies, alcohol, nicotine, GFR <sup>B</sup> , high-risk and OTC <sup>3</sup> medications <input type="checkbox"/> Interactions: with medication, diagnoses or food <input type="checkbox"/> High risk medications: monitoring available, clarify potential misuse and overdose <input type="checkbox"/> ADRs <sup>A</sup> : $\geq 2$ drugs with the same ADR <sup>A</sup> , PIM <sup>D</sup> , potential prescribing cascade	Interactions: <ul style="list-style-type: none"> <li>• <a href="http://www.compendium.ch">www.compendium.ch</a> (Login, incl. Beers list and GFR<sup>B</sup>)</li> <li>• HIV: <a href="http://www.hiv-druginteractions.org">www.hiv-druginteractions.org</a></li> </ul>
5. Effectiveness	Are the therapies effective and monitored?	<input type="checkbox"/> Evidence: treated according to current therapy guidelines <input type="checkbox"/> Goals: symptom control, clinical markers and/or prevention of progression/exacerbation <input type="checkbox"/> Monitoring: available and appropriate	
6. Client	How is the client integrated into the therapy?	<input type="checkbox"/> Adherence: medication taken according to plan or do not take according to plan <input type="checkbox"/> Concerns: costs, handling and swallowing problems and ADRs <sup>A</sup> <input type="checkbox"/> Knowledge: diagnosis, medication, goals, priorities and ADRs <sup>A</sup> <input type="checkbox"/> Wishes: life expectancy, quality of life and risk-benefit analysis	PIM <sup>D</sup> : <ul style="list-style-type: none"> <li>• Priscus: <a href="http://www.gelbe-liste.de/rzneimitteltherapiesicherheit/priscus-liste">www.gelbe-liste.de/rzneimitteltherapiesicherheit/priscus-liste</a></li> <li>• Beers: <a href="http://www.bcp.fu-berlin.de/pharmazie/faecher/klinische_pharmazie/arbeitsgruppe_kloft/materiellen/Beers-Liste.pdf">www.bcp.fu-berlin.de/pharmazie/faecher/klinische_pharmazie/arbeitsgruppe_kloft/materiellen/Beers-Liste.pdf</a></li> <li>• Start/Stop: <a href="http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4339726/">www.ncbi.nlm.nih.gov/pmc/articles/PMC4339726/</a> (Supplementary Materials)</li> </ul>
7. Costs	Are there more cost-effective alternatives?	<input type="checkbox"/> Consider: effectiveness, appropriateness and efficiency <input type="checkbox"/> Pharmacology: generic, combination product, pack size and only one strength <input type="checkbox"/> Non-pharmacological: reduce/stop alcohol and nicotine consumption, exercise, diet and nutrition	
8. Nursing staff	How are the nursing staff involved in the therapy?	<input type="checkbox"/> Medication management: not involved, setting up the weekly dosing system, providing the medication and/or help with taking/using it <input type="checkbox"/> Options: demonstration of the devices, teach back, motivational interviewing	Therapeutic monitoring: <ul style="list-style-type: none"> <li>• <a href="http://www.laborlexikon.de">www.laborlexikon.de</a></li> </ul>
9. Interventions	Which interventions bring the greatest benefit?	<input type="checkbox"/> Prioritization: high, medium or low; from greatest benefit / least harm to least benefit / greatest harm <input type="checkbox"/> Changes: reduce/stop only one medication at a time and monitor condition <input type="checkbox"/> Consider: withdrawal symptoms, addiction and relapse potential	ADRs <sup>A</sup> : <ul style="list-style-type: none"> <li>• Meyler's Side Effects of Drugs (online book)</li> <li>• Lungs: <a href="http://www.pneumotox.com">www.pneumotox.com</a></li> <li>• Liver: <a href="http://www.livertox.nih.gov">www.livertox.nih.gov</a></li> </ul>
10. Communication	Which interventions are forwarded?	<input type="checkbox"/> Consent: obtain information from clients/relatives and care professionals <input type="checkbox"/> Interventions: with the highest prioritization and e.g. forward a maximum of 5 simultaneously <input type="checkbox"/> Contact person: assign doctor, pharmacist, nursing staff or client/relatives <input type="checkbox"/> Mode of communication: use of a standardized process	OTC <sup>C</sup> : <ul style="list-style-type: none"> <li>• <a href="http://www.mayoclinic.com/drugs">www.mayoclinic.com/drugs</a></li> <li>• <a href="http://www.nccih.nih.gov/health/herbsataglance">www.nccih.nih.gov/health/herbsataglance</a></li> </ul>

<sup>A</sup> ADR: adverse drug reaction<sup>B</sup> GFR: glomerular filtration rate<sup>C</sup> OTC: Over-the counter<sup>D</sup> PIM: potentially inadequate medication

No .	Medication/diagnosis	Medication-related problem	Recommendation/comment	Prioritization high, medium, low	Contact person physician, pharmacist, nursing staff, client/relatives
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
...					

## Questions about medication

- High urgency: please reply within 24 hours**  
 Please reply within the next 3 days  
 Please reply within the next 7 days

Name of the institution or home care team: Click to enter the name.  
 Name pharmacist: Click to enter name.  
 Responsible nurse: Click to enter name.  
 E-mail of the contact person: Click to enter e-mail.  
 Phone of the contact person: Click to enter number.

Dear Dr. Click to enter text.

Place, date: Enter place. Enter date.

In the course of caring for your patient, we have come across questions about their medication. We would like to ask you to check the following data and inform us of your decision.

⇒ The current medication list available to home care organization can be found in the appendix.

### Patient information

Last name, first name: Enter patient name.

Date of birth: Enter date

Important current patient information (conspicivities, general condition, individual treatment goals, etc.):  
 Click to enter text.

Medication	Medication-related question or situational question	Proposed measure	Medical decision (to be completed and signed by the physician)
Click to enter medication.	Click to enter text.	Click to enter text.	<input type="checkbox"/> Adoption of the measure <input type="checkbox"/> Rejection of the measure
Drug 2	Click to enter text.	Click to enter text.	<input type="checkbox"/> Adoption of the measure <input type="checkbox"/> Rejection of the measure
Drug 3	Click to enter text.	Click to enter text.	<input type="checkbox"/> Adoption of the measure <input type="checkbox"/> Rejection of the measure
Drug 4	Click to enter text.	Click to enter text.	<input type="checkbox"/> Adoption of the measure <input type="checkbox"/> Rejection of the measure
<b>Comment:</b> Click or tap here to enter text.		<p><b>With my signature, I confirm my medical decision and authorize its implementation.</b></p> <p>Signature (physician):  <hr/></p> <p>Place, date: Enter date</p>	

⇒ In addition to your decision, please send us an updated, complete medication list for the patient, signed by you. This will prevent additional work due to queries about partial prescriptions. Thank you very much!

⇒ If your decision results in a change of medication and medication is obtained from a public pharmacy, a prescription is required from the community pharmacy.

## Establishing interprofessional medication reviews in home care patients – a feasibility study (doMESTIC RedPIM)

### RESULTS - Overview



Eligible patients: 264/436 (61%)  
Recruited patients: 106/264 (40%)  
**Forwarded doMESTIC RISK tools: 106**



Mean risk score: 7.0 ± 2.1 points (range 5 – 16)  
Age: 84.0 ± 7.6 years  
Sex: 69% female, 31% male  
Fix medication: 11.2 ± 4.5 (min: 2, max: 24)  
As needed meds: 2.8 ± 3.5 (min: 0, max: 14)  
Self medication 0.45 ± 1.0 (min: 0, max: 5)



Data sets returned to research group: 76 patients (76/106, 72%)  
doMESTIC RISK score ≥ 5: 49 patients (49/76, 65%)  
doMESTIC RISK score < 5: 26 patients  
doMESTIC RISK score missing: 1 patient  
Problems identified: 120  
Potential interventions: 64  
**Prioritized suggestions for PCP: 43 in 18 patients**



Questions/suggestions answered: 8 patients (8/18, 44%)  
Updated prescription transmitted: 5 patients (5/8, 67%)  
**Suggested interventions accepted: 14 interventions (14/22, 63.6%)**



Home care



Community pharmacists



Primary care physician

