

Technologies to monitor and improve adherence of oral medications in Dutch community pharmacy

Dr. J.W. Foppe van Mil

Community pharmacist/ Pharmacy Practice Consultant

Professional secretary of PCNE and DRM-Foundation



Learning objectives

- After this presentation, the audience will understand how technology in the Netherlands assists pharmacists in improving adherence in their patients.

Words.....

- Compliance <> adherence <> persistence <> concordance
- Preferred term in context of this presentation:
Adherence: the extent to which a person's behaviour –taking medication, following a diet or executing lifestyle changes- corresponds with agreed recommendations from a healthcare professional/provider
- Three components:
 - Initiation
 - Implementation or Persistence
 - Discontinuation



Overview

- How bad is the patients' adherence really
- How to measure and improve
- What can the pharmacist do
- What do Dutch community pharmacists do
- Caveats
- Conclusion

Our challenge

- Patients usually have a hard time to adhere fully to the therapies that have been suggested.
- Full adherence to the correct and intended use of medicines is rare, and an average of 60-70% adherence is customary.
- Literature data (different methods-settings-countries):
 - In general 4 days after initiating therapy: 75%
 - Diabetes 80%
 - Hypertension 60-90%
 - Chronic drug use 50%
 - 10-day Antibiotic courses 75%
 - Asthma 55-90%
- Sometimes full adherence is not always necessary for optimal outcome of therapy

Measuring adherence

Direct methods

- Blood levels – PK/PD
- Biological markers

* = Feasible in
community
pharmacy

Indirect measures

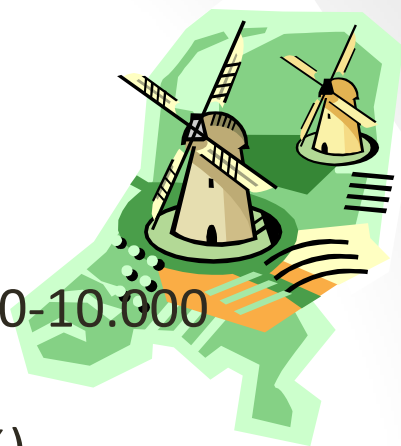
- Questionnaires*
- Patient report/Diaries *
- Pill counts *
- Dispensing data *
- Assessing clinical response
- Electronic tools (smart packages) *

Improving adherence by pharmacists

- Counselling/provide psychological support
- Providing written information
- Monitor medicine taking in the pharmacy
- Instructions for self monitoring (e.g. diabetes)
- Technological support
 - Reminders (including apps for Iphone and android)
 - Dispensing in week dispensing systems/boxes , blisters
 - Containers with alarms
 - Phone, email or SMS services,
 - IT-tools and websites

(based on: **Interventions for enhancing medication adherence** , Cochrane 2008)

In the Netherlands (1)



- Pharmacies are relatively big (serve approx 8000-10.000 people).
- Most patients visit the same pharmacy (90-95%).
- Good GP-Pharmacist cooperation
- Most GP's have direct data-link with pharmacies and exchange medication histories, send prescriptions, and share some lab-data.
- Almost all repeats go through GP's. We hardly have repeatable prescriptions for chronic medications.
- Repeat portions in general prescribed and dispensed for 3 months (with exceptions).
- Almost all pharmacies are in a regional data-network, and exchange dispensing data: reasonable reliable overview available per patient.

In the Netherlands (2)



- All prescriptions include the instructions for use and some indications (by law)
- All prescriptions include the suggested number of 'pills' to be dispensed; we can dispense any number (open packs)
- Thus: Pharmacists can calculate how long a dispensed portion of medicines should-can last
- Pharmacy software gives alert for (calculated) overuse or underuse when dispensing repeat prescription.
 - N.B. Alert not always right!
 - Doctor has changed dosage without informing pharmacy
 - Patient took drug-holiday because of other medical intervention
 - Ointments-creams cannot be properly monitored
 - Patient leaves for holiday/expat work
 - (etc)

Improving adherence by Dutch pharmacists (1)

- At first time dispensing: counselling
- At second time dispensing: counselling
- When non-adherence is observed: Counselling: with help of Drug Use Profile (DUP, or Medication Evaluation Profile, MEP) & discuss with the patients.
- Cooperate with prescriber: Send note or the DUP to the physician, in case of overuse of e.g. tranquilizers or opioids, without a clear reason.
- Independent counselling site with a 'medicines-coach': www.2comply.nl, also can send reminders. Some pharmacists provide their patients access to that site.

MEDICATION EVALUATION PROFILE (6 mnds) date: 5th October 2012

Patient: Mrs. JK

Gender: M/F

Age/Birth date: 72

GP: Dr. absent

Medicine name	ATC	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Perindopril/Indapamide 5-1.25mgm 1x1									
Atenolol 50mgm 1x1									
Atorvastatin 20mgm 1x1									
Calcium carbonate 1500mgm 2x1									
Alendronate/colecalciferol 70mgm/70mcg 1w1									
Glyceryl trinitrate spray 200ds max 6x1		♥		♥	♥	♥	♥		
Isosorbide mononitrate SR 60mg 1x1									

•Alert: too early for new spray

•Alert: First time. Counsel!

Improving adherence by Dutch pharmacists (2)

- Synchronising medicines: make sure that all chronic medicines run out at the same moment, and patient receives all new meds simultaneously
- This gives an indication of the adherence, but patient still needs to request refills (at the GP)

MEDICATION EVALUATION PROFILE (6 mnds) date: 5th October 2012

Patient: Mrs. JK

Gender: M/F

Age/Birth date: 72

GP: Dr. absent

Medicine name	ATC	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Perindopril/Indapamide 5-1.25mgm 1x1		_____	_____	_____	_____	_____	_____		
Atenolol 50mgm 1x1		_____	_____	_____	_____	_____	_____		
Atorvastatin 20mgm 1x1		_____	_____	_____	_____	_____	_____		
Calcium carbonate 1500mgm 2x1		_____	_____	_____	_____	_____	_____		
Alendronate/colecalciferol 70mgm/70mcg 1w1		_____	_____	_____	_____	_____	_____		
Glyceryl trinitrate spray 200ds max 6x1		♥		♥	♥	♥	♥		
Isosorbide mononitrate SR 60mg 1x1						_____			

Today

Improving adherence by Dutch pharmacists (3)

- Synchronising medicines: all chronic medicines run out at the same moment, and patient receives all new meds simultaneously

AND (second step)

- Repeat service after synchronising: Pharmacists makes sure that the next portion of medicines is ready when the patient needs it. They then inform patients by (e)mail that they can come by to pick up their medicines. (in agreement with GP, automated by pharmacy software)

Improving adherence by Dutch pharmacists (4)

- Dispensing in week-dispensing systems (pharmacy fills!)
 - Dosett or medication rolls
- Multidose drug dispensing increases adherence in the elderly with polypharmacy by 20% (58 ->81%, Kwint et al 2013)



See <http://www.medicatierolmetpico.nl/home/pico>



All very nice but:

- Daily dose on prescriptions must be correct
 - If the GP or specialist changes the daily use, the pharmacist may not be informed. This may lead to false impression of non-adherence.
 - For certain medicines the dose changes often (coumarins!), adherence cannot be monitored
- Patients must indeed take the medicines and not sell them or throw them away
- Phone or pad should be near the patient for SMS reminders to work
- Lack of 'Persistence' can not be signalled by Dutch pharmacy-systems , and is only detected when doing Medication review.

Conclusion

- There is a number of options for support that Dutch community pharmacists can offer to patients and their carers, to improve adherence to pharmacotherapy.
- For most strategies to be effective, it is imperative that the pharmacist knows the daily use of the medicines. This is not the case in several countries.
- Pharmacists can have an important role in improving adherence to medicine use, especially in improving implementation or persistence

Technologies to monitor and improve adherence in community pharmacy

Dr. J.W. Foppe van Mil

Community pharmacist/ Pharmacy Practice Consultant

PCNE professional secretary