



**USING DRUGS RATIONALLY:**

**WHAT DID WE LEARN?**

**HOW DO WE UTILIZE OUR KNOWLEDGE?**

*Arzu Onay-Beşikci\*, Hale Zerrin Toklu,  
Bülent Gümüşel*

*\*Ankara University, Faculty of Pharmacy*



# O U T L I N E

## 1. PROBLEM

Irrational drug use/dispersing despite a rather heavy education

## 2. ALTERNATIVE TEACHING MODEL

Problem-based learning

## 3. APPLICATION TO REAL LIFE

How do we do?

**rational, appropriate, proper, correct drug use**

...**patients** receive medications  
**appropriate** to their **clinical**  
**needs**, in **doses** that meet their  
**individual** requirements, for an  
**adequate** period of **time**, and at  
the **lowest cost** to them and  
their community.....



✓ **In Europe**, some countries are using **3x** the amount of antibiotics per head of population in terms of instructing patients and/or labeling dispensed medicines compared to other countries with similar

disease profiles

- ✓ up to **50%** of all dispensing events
- ✓ **Patient adherence** to treatment regimes are inadequate

**50%** worldwide





# PHARMACIST





# a pharmacist

is the person who evaluates the  
prescription and **-one more time-**  
the patient's situation very carefully

**++**

whom the patient most easily have  
access to



... the role of today's pharmacists needs to be expanded to include pharmaceutical care concepts, turning the pharmacist into a healthcare professional rather than a shopkeeper in a commercial enterprise...



*H.Z. Toklu, Current Drug Delivery, 2013*







pharmacotherapy is  
taught as lectures  
in pharmacy schools

pharmacists cannot  
easily implement  
theoretical knowledge  
into practice



# *Problem - Based Rational Pharmacotherapy Teaching*

- **Modified Groningen** model is applied in some medical schools in Turkey
- **Problem-based learning** enables students to **identify** and **solve** the **problems** for it provides the ability for **critical thinking**
- improves problem solving skills and decision making during pharmacotherapy

❖ The checklist/ score sheet used in the medical schools is called as “OSCE” (objective structured clinical examination)

❖ For pharmacy students, a model OSPE (objective structured practical examination) sheet for evaluating the dispensing score of the pharmacist prepared by the pharmacology lecturers of “Turkish Pharmacological Society”

OBJECTIVE STRUCTURED PRACTICAL EXAMINATION (OSPE) FORM FOR “RATIONAL DRUG USE” COURSE  
(EVALUATION OF PRESCRIPTION DISPENSING)

# I. Controls on Patient/Prescription

*Evaluate the course of prescription dispensing:*

*0. No information                      1. Bad                      2. Moderate                      3. Good                      4. Excellent*

*D) Controls on Patient/Prescription (12)*

Prescription control (Name, sex and age of the patient, date of prescription, doctor's signature and seal etc)	0	1	2	3	4
Appropriateness (Indication-drug consistency)	0	1	2	3	4
Patient's history (Allergy, co-existing diseases, other drugs/supplements used etc)	0	1	2	3	4

**OBJECTIVE STRUCTURED PRACTICAL EXAMINATION (OSPE) FORM FOR "RATIONAL DRUG USE" COURSE  
(EVALUATION OF PRESCRIPTION DISPENSING)**

# II. Information given to patient/relative about drug/treatment

*II) Information given to the patient/ relative about the drug/treatment (64)*

Name of the drug	0	1	2	3	4
Pharmaceutical form of drug	0	1	2	3	4
Dosage of the drug	0	1	2	3	4
Aim of drug therapy/purpose of using this drug	0	1	2	3	4
Initiation and duration of effect	0	1	2	3	4
Instructions for use	0	1	2	3	4
Treatment duration	0	1	2	3	4
Emphasizing the importance of compliance	0	1	2	3	4
Contraindications	0	1	2	3	4
Side effects and warning (driving or operating vehicles/machinery, special precautions if necessary)	0	1	2	3	4
Warning about use in pregnancy/lactation	0	1	2	3	4
Drug interactions	0	1	2	3	4
Food interactions	0	1	2	3	4
Non-drug treatment	0	1	2	3	4
Labeling and written information on the drug package	0	1	2	3	4
Storage	0	1	2	3	4

OBJECTIVE STRUCTURED PRACTICAL EXAMINATION (OSPE) FORM FOR "RATIONAL DRUG USE" COURSE  
(EVALUATION OF PRESCRIPTION DISPENSING)

## III. Communication skills

III) <i>Communication skills (24)</i>					
Clear and understandable	0	1	2	3	4
Integrity, fluency and configuration of speech	0	1	2	3	4
Allow the patient to express him/herself and to ask questions	0	1	2	3	4
Confirm and clarify that patient/relative understood the information given	0	1	2	3	4
Make patient/relative repeat the instructions	0	1	2	3	4
Compliance with time	0	1	2	3	4
Total:					

# 1. PRE-TEST



## REÇETE

Sayı No 26	KURUMU	Tarih
Hastanın Adı Soyadı Engin KARACAN	Protokol No.	
Kurum Sicil No.	Dr. Dış. No. Adı Soyadı (Veya Kaşesi)	
Sağlık Kurumunun Adı Konak 29 Nolu FAHAY AŞM 35.19/143	KAŞE	
İlaçları Tutarık ve Fiküsler		
Tedavis		
GEREKİLİ TEDAVİ, İLAÇ, PROTEZ VE İYİLEŞTİRME ARAÇLARI		
Seri : C 5 No. : 572813	Rp.	
	1). SERETIDE DISCUS 250 mcg S: 2x1	
	2). SINGULAIR 10 MG S: 1x1	
Sağlık Kurumunun Müdürü, İmza	İlaçları Alanın Adı, Soyadı, İmza	





# The Dispensing Score of the Attendants in Various “Rational Drug Use” Courses

Course Year	Description	Dispensing Score		Student's t-test
		Pre-test	Post-test	
2009	Pharmacology lecturers (n=15)	31.47 ± 12.3	72.13 ± 15.2	P<0.0001
2009	Community pharmacists of Istanbul Chamber of Pharmacists (n=19)	39.39 ± 10.8	63.67 ± 9.2	P<0.0001
2010	Marmara University 5 <sup>th</sup> class students (n=42)	23.55 ± 8.9	56.17 ± 11.2	P<0.0001
2011	Community pharmacists of Trabzon Chamber of Pharmacists (n=27)	29.09 ± 10.4	58.63 ± 9.7	P<0.0001
2011	Near East University 3 <sup>rd</sup> class students (n=34)	34.26 ± 13.6	62.18 ± 13.0	P<0.0001
2011	Marmara University 5 <sup>th</sup> class students (n=88)	33.02 ± 12.9	52.35 ± 12.7	P<0.0001
2012	Near East University 3 <sup>rd</sup> class students (n=17)	34,94 ± 11.6	67,06 ± 15.6	P<0.0001

# EDUCATION



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*H.Z. Toklu, Current Drug Delivery, 2013*

# The role of the pharmacists in rational drug use of inhaled drugs

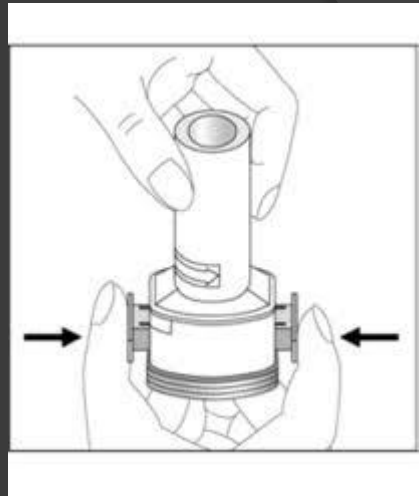
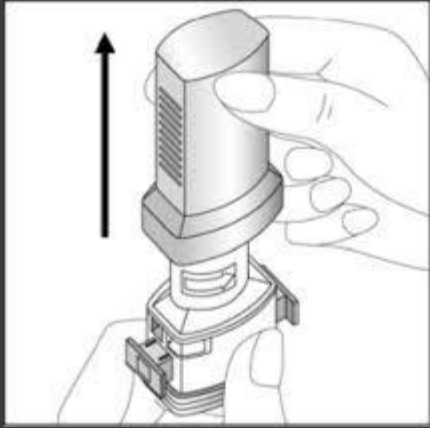
*Kübra Soybilgin, Bülent Gümüşel*

- 207 pharmacies in Ankara
- Pre-test
- Education
- Post-test

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Tedavis		
GEREKLİ TEDAVİ, İLAÇ, PROTEZ VE İYİLEŞTİRME ARAÇLARI		
Seri : C 5 No. : 572813		
1). FORADIL COMBI INHALER 12 mcg/200 mcg S: 2x1		
Sağlık Kurumunu Mühür, İmza		İlaçları Alınan Adı, Soyadı, İmza







# The role of the pharmacists in rational drug use of inhaled drugs

- ◆ Score sheet was reconstructed for the prescription
- ◆ Total 15 p for proper explanation of drug use
- ◆ Total 23 p for general information on the prescription
- ◆ “Simulated patients” timed dispensing

		<b>Number</b>	<b>Dispensing time (± SD)</b>	<b>General information score (max:23) (± SD)</b>	<b>Proper drug use score (max:15) (± SD)</b>
<b>Location</b>	<b>1</b>	67	151.9 ± 69	10.06 ± 3.7	7.7 ± 3.2
	<b>2</b>	58	120.0 ± 78	5.81 ± 2.9	4.5 ± 2.4
	<b>3</b>	82	151.1 ± 84	8.04 ± 4.3	5.4 ± 3.4
	<b>Total</b>	207	142.3 ± 78	8.07 ± 4.1	6.0 ± 3.3



On 12 January 2013,  
the pharmacist have been  
invited to take part at a problem-  
based education day





# 3 MONTHS AFTER EDUCATION...



Pulmicort 200 mcg Turbuhaler  
S:2X2





	PRE-Test	POST-Test
<b>Dispensing time</b> ( $\pm$ SD)	153.6 $\pm$ 86	244.6 $\pm$ 38*
<b>Proper drug use score</b> ( $\pm$ SD)	6.6 $\pm$ 3.6	13.7 $\pm$ 0.6*
<b>General information score</b> ( $\pm$ SD)	8.7 $\pm$ 4.5	19.5 $\pm$ 1.5*

# HOW DO WE UTILIZE OUR KNOWLEDGE?



Hacettepe University,

Near East University,

Faculty of Pharmacy

Faculty -

OTC DRUGS; Rational Drug Use



# Youth Commission Ankara Chamber of Pharmacists



Xth Dispersing Competition  
Amongst Pharmacy Students

Applied

KNOWLEDGE

Is Powerful!



WELCOME TO

PERFECTION

ENJOY THE JOURNEY