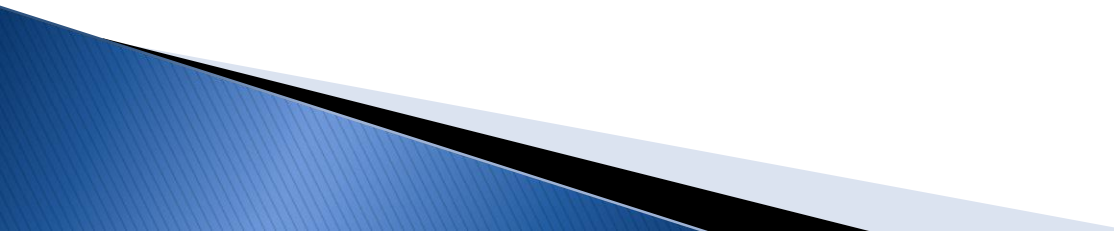# DRUG UTILISATION IN TURKEY: FIRST RESULTS BY SGK – MEDULA DATABASE

A Akici, MN. Dogukan, H Gok, B Donertas, S. E Gulmez, A Y. Kaptanoglu, B Karahan, M Yer, V Kutay, S Kalaca

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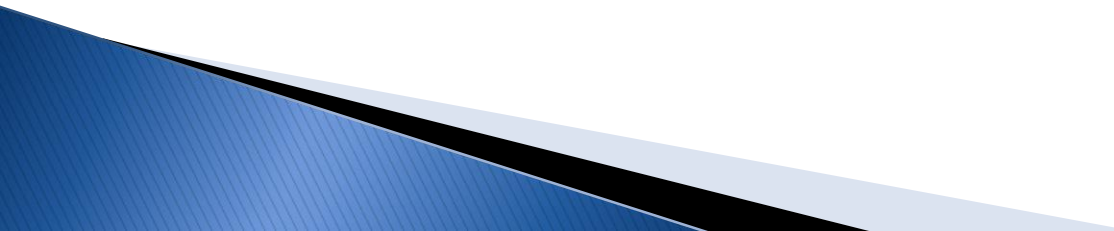
Background

▸ Worldwide, it is estimated that half of all medicines are inappropriately prescribed, dispensed or sold, and that half of all patients fail to take their medicine properly.

▸ The inappropriate use of medicines is not only widespread, it is costly and extremely harmful both to the individual and the population as a whole (adverse drug events, growing resistance to antimicrobial medicines etc..)

Background

▸ Irrational use of medicines (IUM) and high-cost medication is an important problem in Turkey as well

▸ As healthcare services are nearly fully reimbursed in Turkey by Social Security Institution (SSI/SGK), this may threaten sustainability of the services provided by SGK

Background

- IUM and high medicine expenditure has been discussed in Turkey for a while and a need for improving the situation is emphasized in several mediums.

- SGK initiated a comprehensive project together with Marmara University in order to create awareness in the society as well as among health professionals to improve IUM for the benefit of the entire health system.
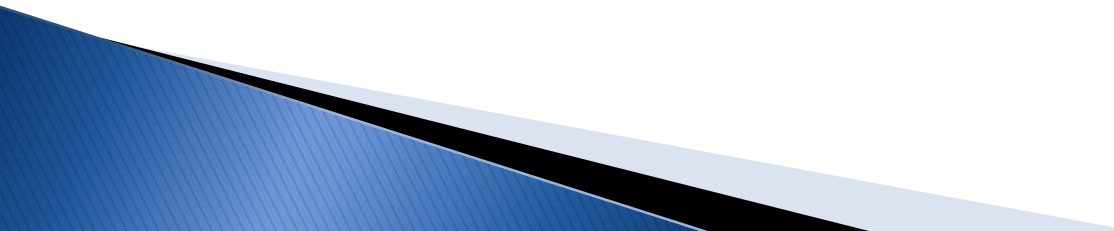
Background

▸ Activities involve preparing illustrative knowledge, education, communication materials and e-learning materials for health providers as well as for the different target groups such as children, adolescents, adults, patients and SGK staff. An interactive training course is planned for SGK staff

▸ At the beginning of the project, a baseline study was conducted

Aim

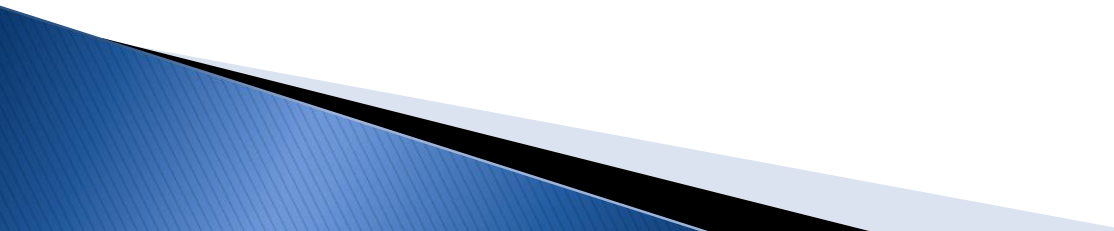▸ to evaluate the compliance of the prescriptions in the Medula System of SGK with regard to drug utilization indicators that examines principles of rational use of medicines (RUM).

Method

- SGK/SSI has the Medula System containing all reimbursed prescriptions.

- A total of 6 206 970 prescriptions that were recorded and controlled during the five working days from 4–8 February 2013 were retrospectively evaluated.

Method

- WHO/INRUD– drug use indicators (**prescribing indicators**, patient care indicators, facility indicators)

- Average number of medicines per prescription (ANMPP),
- Average cost per prescription (ACPP),
- Most frequently prescribed medications
  (The Anatomical Therapeutic Chemical Classification (ATC) system)

Results

- For 6 206 970 prescriptions, 15 139 431 medications were prescribed.

Table 1. Number of prescription by sex

Sex	Number of prescription	%
Male	2.509.859	40.4
Female	3.697.111	59.6
Total	6.206.970	100.0

Table 2. ANMPP by age group

Age groups	Number of medicine	Average number of medicines per prescription (ANMPP)
=>65	*2.901.953*	2,606
45-64	*4.646.349*	2,511
30-44	*2.688.712*	2,356
18-29	*1.643.266*	2,236
<18	*3.259.151*	2,384
Female	***9.023.674***	**2,441**
Male	***6.115.757***	**2,437**
Total	**15.139.431**	**2,439**

Table 3. ACPP by age group

Age groups	Number of prescription	%	Average cost per prescription
=>65	1.113.761	17.9	**57,21 TL**
45-64	1.850.242	29.8	47,63 TL
30-44	1.141.126	18.4	35,22 TL
18-29	735.025	11.8	29,63 TL
<18	1.366.816	22.0	21,71 TL
Total	**6.206.970**	100.0	**39,23 TL**

Male: 43,79 TL
Female: 36,13 TL

Tablo 4. Most frequently prescribed medications

Rank	ATC5 code	Name	number
1	R05XQQQ	Other cold preparations	777570
2	J01CR02	Amoxicillin and enzyme inhibitor	636759
3	M01AB05	Diclofenac	350472
4	N02BE01	Paracetamol	330314
5	R05CB01	Acetylcysteine	297088

Tablo 5. Most frequently prescribed medications / females

Rank	ATC5 code	Name	Number
1	R05XQQQ	Other cold preparations	414881
2	J01CR02	Amoxicillin and enzyme inhibitor	331442
3	M01AB05	Diclofenac	224025
4	N02BE01	Paracetamol	187803
5	A01AD02	Benzydamine	159229

Tablo 6. Most frequently prescribed medications / males

rank	ATC5 kodu	Name	number
1	R05XQQQ	Other cold preparations	362689
2	J01CR02	Amoxicillin and enzyme inhibitor	305317
3	R05CB01	Acetylcysteine	146223
4	N02BE01	Paracetamol	142511
5	M01AB05	Diclofenac	126447

Tablo 7. Most frequently prescribed medications / age < 18

rank	ATC5 kodu	name	number
1	R05XQQQ	Other cold preparations	392241
2	J01CR02	Amoxicillin and enzyme inhibitor	295111
3	M01AE01	Ibuprofen	202866
4	N02BE01	Paracetamol	188757
5	R05CB01	Acetylcysteine	95860

Tablo 8. Most frequently prescribed medications / 18-29

rank	ATC5 kodu	name	number
1	J01CR02	Amoxicillin and enzyme inhibitor	82439
2	R05XQQQ	Other cold preparations	72337
3	A01AD02	Benzydamine	59551
4	J01DC02	Cefuroxime	37635
5	M01AB05	Diclofenac	36142

Tablo 9. Most frequently prescribed medications / 30-44

rank	ATC5 kodu	name	number
1	J01CR02	Amoxicillin and enzyme inhibitor	110603
2	R05XQQQ	Other cold preparations	108552
3	M01AB05	Diclofenac	75522
4	A01AD02	Benzydamine	74173
5	M03BX05	Thiocolchicoside	62738

Tablo 10. Most frequently prescribed medications / 45–64

rank	ATC5 kodu	name	number
1	R05XQQQ	Other cold preparations	147157
2	M01AB05	Diclofenac	141978
3	J01CR02	Amoxicillin and enzyme inhibitor	112167
4	M03BX05	Thiocolchicoside	99621
5	A02BC03	Lansoprazole	89714

Tablo 11. Most frequently prescribed medications / yas >= 65

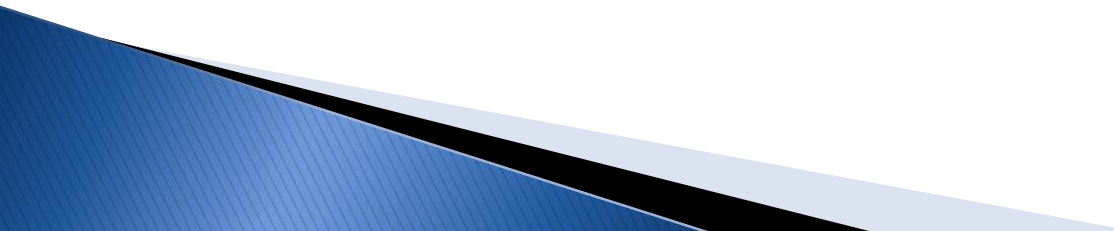| rank	ATC5 kodu	name	number
1	M01AB05	Diclofenac	89171
2	A02BC03	Lansoprazole	60448
3	R05XQQQ	Other cold preparations	57283
4	A02BC02	Pantoprazole	49704
5	M03BX05	Thiocolchicoside	46555

- **Turkey–2012 (all)– ANMPP: 2.4**
  - İstanbul–1999 (PHC) – ANMPP: 3.3
  - İzmir–2003 (PHC) – ANMPP: 2.9

- **ACPP (2013–February): 39.23 TL**
  - ACPP (2012–Jan–March): 38.45 TL

Conclusion

- If seasonal effect is ignored, relatively high prescription of amoxicillin–enzyme inhibitor and cold preparations might be considered as a result of "infection–focusing treatment oversupply" matter in Turkey.

Conclusion

- Our results should be considered as a warning for RUM in Turkey and indicate the necessity of larger studies representing the whole population

- More effective monitoring and regulation of medicines, and public education and information are important components of a strategy for increased rational use.

- Thank you!
- Teşekkür ederim!
- Sukran!