



REFUGEES OF THE SYRIAN CIVIL WAR: Impact on Health Service, Re-emerging Infections and Biosecurity in Turkey

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Disclosure

- I have no actual or potential conflict of interest in relation to this presentation

Outlines

- Refugee
- Syrian refugee crisis
- Impact on Turkish Health Care System
- Refugees, Infections and Re-emerging Infections
- Biosecurity
- Future challenges

Refugee: Definition

- Refugee

- A person who has escaped from their own country for political, religious, or economic reasons or because of war
- Protected with international laws (1951 Refugee Convention, 1969 OAU Refugee Convention)
 - Safety from being returned to the dangers they have fled
 - Access to asylum procedures that are fair and efficient
 - Measures to ensure that their basic human rights
 - Access to medical care, schooling and the right to work

Governments have primary responsibility for this protection



U.N.: Syrian Refugee
Crisis is 'Biggest
Humanitarian
Emergency of Our Era'



- Over **200,000** casualties
- Led to the biggest population movement since the Second World War

Syrian refugees by March 2016

| | |
|-------------------------------|---------------------------------|
| Syrian population by 2010 | 22 ,198 ,110 |
| Syrian population by 2016 | 17, 951, 640 |
| Internal displaced population | 6 ,600, 000 |
| Total refugees | 4, 815 ,360 (Registered) |

Distribution of refugees according to The host Countries

| Country | Number of Syrian refugees |
|---------------------|---------------------------|
| Turkey | 2,748,367 |
| Lebanon | 1, 067 ,785 |
| Jordan | 639, 204 |
| Germany | 484, 000 |
| Greece | 480 ,000 |
| Saudi Arabia | 420 ,000 |
| Macedonia | 400 ,000 |
| Serbia | 313 ,035 |
| Iraq | 245 ,543 |
| United Arab Emirate | 242, 000 |
| Other countries | 833 ,464 |

SYRIAN REFUGEE CRISIS

Families Fleeing Violence

There are more than 4.7 million Syrian refugees in neighboring countries. Nearly one million have applied for asylum in the safety of Europe. More than **13.5 million people are still in need** of assistance inside Syria.



1 in 5 people is a Syrian refugee **1,069,111**



1 in 13 people is a Syrian refugee **637,859**

TURKEY **2,620,553**

SYRIA
6.6 million people
internally displaced

IRAQ
245,543

EGYPT
118,512



As of February 24, 2016
Sources: <http://data.unhcr.org/syrianrefugees/regional.php>
UNOCHA.org/syria



Registered Syrian Refugees

4,843,126

Demography

Male (49.2%)

Age

(50.8%) Female

8.8%



0 - 4



8.3%

11.2%



5 - 11



10.7%

6.6%



12 - 17



6.2%

21.4%



18 - 59



23.9%

1.3%



60 +



1.6%



<http://data.unhcr.org/syrianrefugees/regional.php>

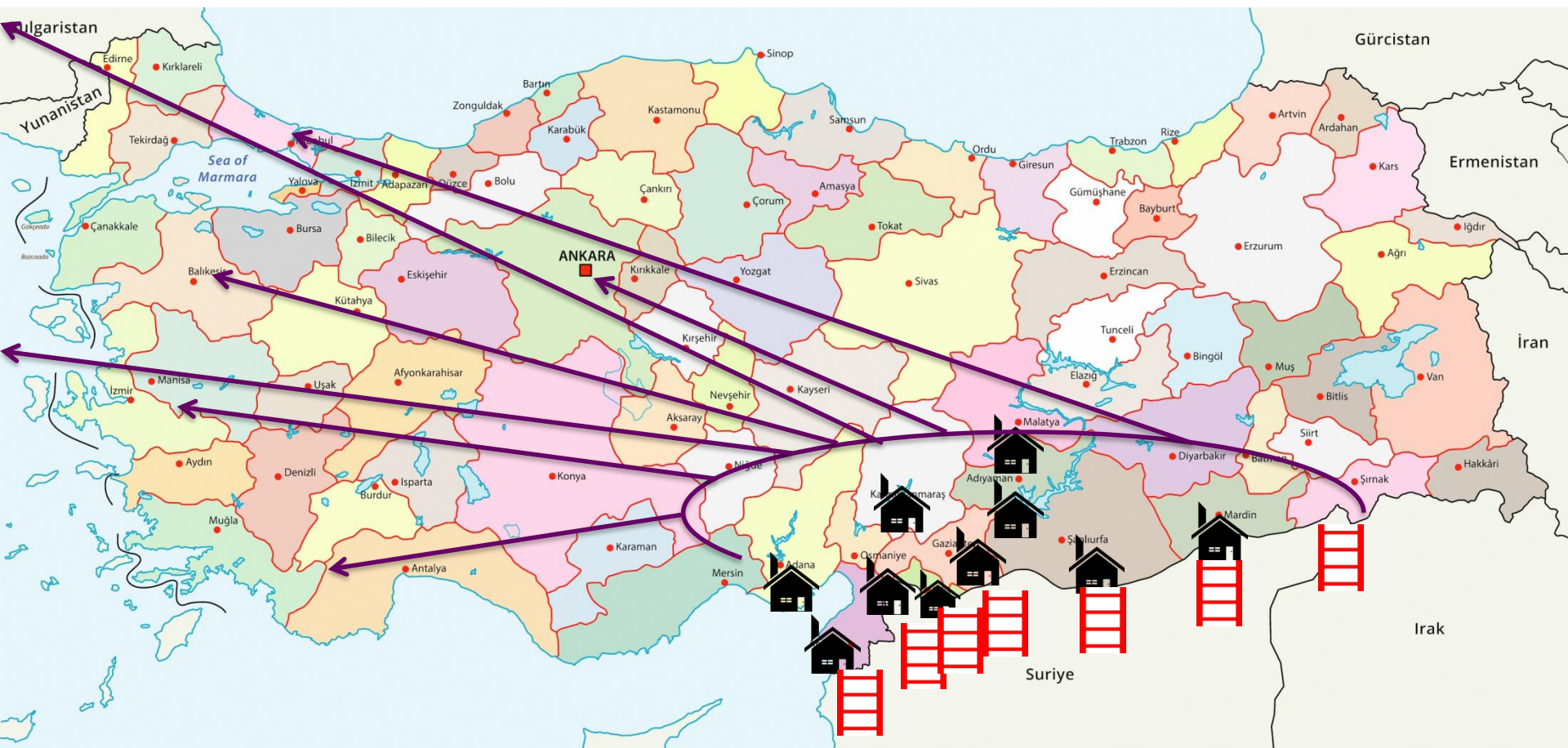
Syrian conflict and Turkey

- Onset of Syrian civil war : **2011**
- By May, about 300 Syrian refugees cross into Turkey
- Turkish government has implemented "**open-door policy**"
- Collaborating with governmental and non-governmental organizations
- Hosting **>2,700,000** refugees
 - 10% of refugees stay in accommodation centers
- Spent over **\$ 20 billion** (\$ 10 billion spent by the government and \$ 10 billion spent by non-governmental organizations) for caring of refugee population

INSTITUTIONS RELATED WITH IMMIGRATION AND REFUGEES IN REPUBLIC OF TURKEY

- Ministry of Interior, Directorate General of Migration Management
(http://www.goc.gov.tr/main/Eng_3)
- Prime Ministry Disaster and Emergency Management Presidency (AFAD)
<https://www.afad.gov.tr/EN/Index.aspx>
- Ministry of Health; <http://saglik.gov.tr/TR/ana-sayfa/1-0/20160516.html>
- **Civilian aid agencies**
 - The Turkish Red Crescent (<https://www.kizilay.org.tr/>)
 - Others

Refugee Camps and Migration Way in Turkey



- 7 crossing doors in the border, **2,700,000** refugees
- 25 accommodation centers in ten cities
- 300,000 refugees in camps

Table 3. **Age and Gender distribution of Syrian Refugees in Turkey**

| Population group | Age groups | Number of refugee |
|--|------------------|-------------------|
| Syrian Refugees in Camps (25 camps) | Men | 68,400 |
| | Women | 69,000 |
| | Boys | 84,000 |
| | Girls | 78,600 |
| | Sub total | 300,000 |
| Syrian Refugees in the Community | Men | 558,600 |
| | Women | 563,500 |
| | Boys | 686,000 |
| | Girls | 641,900 |
| | Sub total | 2,450,000 |
| TOTAL | | 2,750,000 |
| Education Age Groups | Going to school | 350 000 |
| | Total | 750 000 |



SYRIAN REFUGEES JOURNEY TO GREECE and THROUGH EUROPE January 01, 2016

| | |
|---|----------------|
| Crossing Aegean see (January 1- December 24, 2015) | 90 198 |
| Arrested | 25 864 |
| Casualties | 706 |
| Arrive to Greece | 821 000 |
| Total casualties in Aegean and Mediterranean see | 3 760 |



<http://www.sozcu.com.tr/2016/gundem/egede-kacak-gocmen-rekoru-kirildi-1026072/>
http://www.bbc.com/turkce/haberler/2015/12/151230_turkiye_gocmen_yunanistan

Current Status in AFAD Temporary Protection Centers (Disaster and Emergency Management Presidency)



As of 21 March 2016

**The Number of Syrians In AFAD Temporary
Protection Centers**

272.439

<https://www.afad.gov.tr/TR/IcerikDetay1.aspx?ID=16&IcerikID=848>

Conditions in camps



I for 22



I for 23



Children and education in camps



- 20% of migrants are <5 years old
- 53% are <18 years old
- ≈60.000 were born in Turkey

Healthcare in camps



**In case of
emergency!
please call ●**



155 | Police



156 | Gendarmerie



112 | Emergency Medical
Services



110 | Fire and Similar
Situations



122 | Disaster and
Emergency Situations



157 | Combatting Human
Trafficking Helpline



T.C.
İÇİŞLERİ BAKANLIĞI
GÖÇ İDARESİ
GENEL MÜDÜRLÜĞÜ

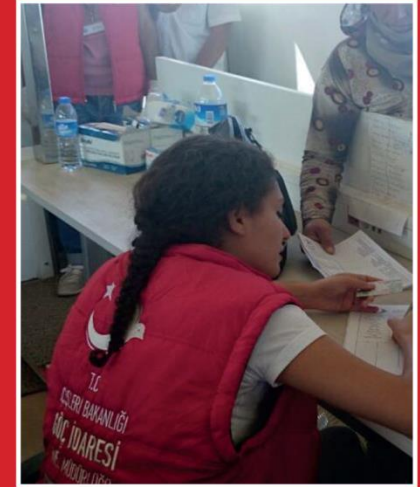
ULUSLARARASI KORUMA DAİRESİ BAŞKANLIĞI
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**KAYIT YAPTIRIN
HAK VE HİZMETLERDEN
FAYDALANIN!**

REGISTER AND BENEFIT FROM RIGHTS AND SERVICES!

إتم التسجيل للاستفادة الحقوق والخدمات



SURİYELİLER İÇİN BİLGİLENDİRME BROŞÜRÜ

Medicare

- Law on foreigners and international protection that has entered into force on 11 April 2014
- Basic Medical requirements of Syrian refugees include;
 - Examination and Medicine
 - Dentures
 - Eyeglasses
 - Hearing aids
 - Other medical materials
- Treatment costs are to be billed to the Governor of the relevant province

Risks for Increased infection for the Syrian Refugees

- Living outdoors; expose to extreme temperature (warm and cool)
- Crowded and unsanitary living conditions
- Starving
- Low standards of environmental hygiene
- Unsafe food and water
- Unsafe travel and transportation
- Limited to access health care
- Insufficient health care facilities
- Interruption of vaccination programs
- Shortage of drugs

The major impact of Syrian civil war on the Turkish health system

- Acute care of wounded people and the need for physically rehabilitation,
- Resistant bacterial infections,
- Community acquired infections and outbreaks,
- Mentally or physically rehabilitation of wounded people,
- Care of chronic and debilitating diseases
- Over workload for health care system and an additional economical burden,
- Biosecurity risks

Health services provided to Syrian refugees between 2011 and 2014

| | | |
|--|--------------------------------|----------------------------|
| Number of outpatient examination | 6 660 055 | |
| Number of hospitalization | 302 805 | |
| Hospitalization of wounded patients | 25 467 | |
| Number of operation | 228 537 | |
| Number of childbirth | 48 628 | |
| Number of polio vaccination (0-15 ages) | 353 041 | |
| | | |
| Total health cost at the end of 2014 | 579 ,793 ,026.69 TL | 175 ,694, 856.36 € |
| | | |
| Total number of outpatient examination between 2011 and 2015 | 7 519 668 | |
| Total health cost at the end of 2015 | 2 ,860 ,716, 693. 89 TL | 866 ,883, 846. 63 € |

Potential Infectious Disease Risk From The Syrian Conflict

- Polio
- Measles
- Tuberculosis
- Leishmaniasis
- Hepatitis A
- Cholera
- Typhoid fever
- Diarrhea
- Scabies
- Malaria
- Schistosoma haematobium
- Dengue fever
- West Nile virus infection
- MERS-CoV

Ozaras R and et al. Expert Rev Anti Infect Ther. 2016 Apr 27:1-9

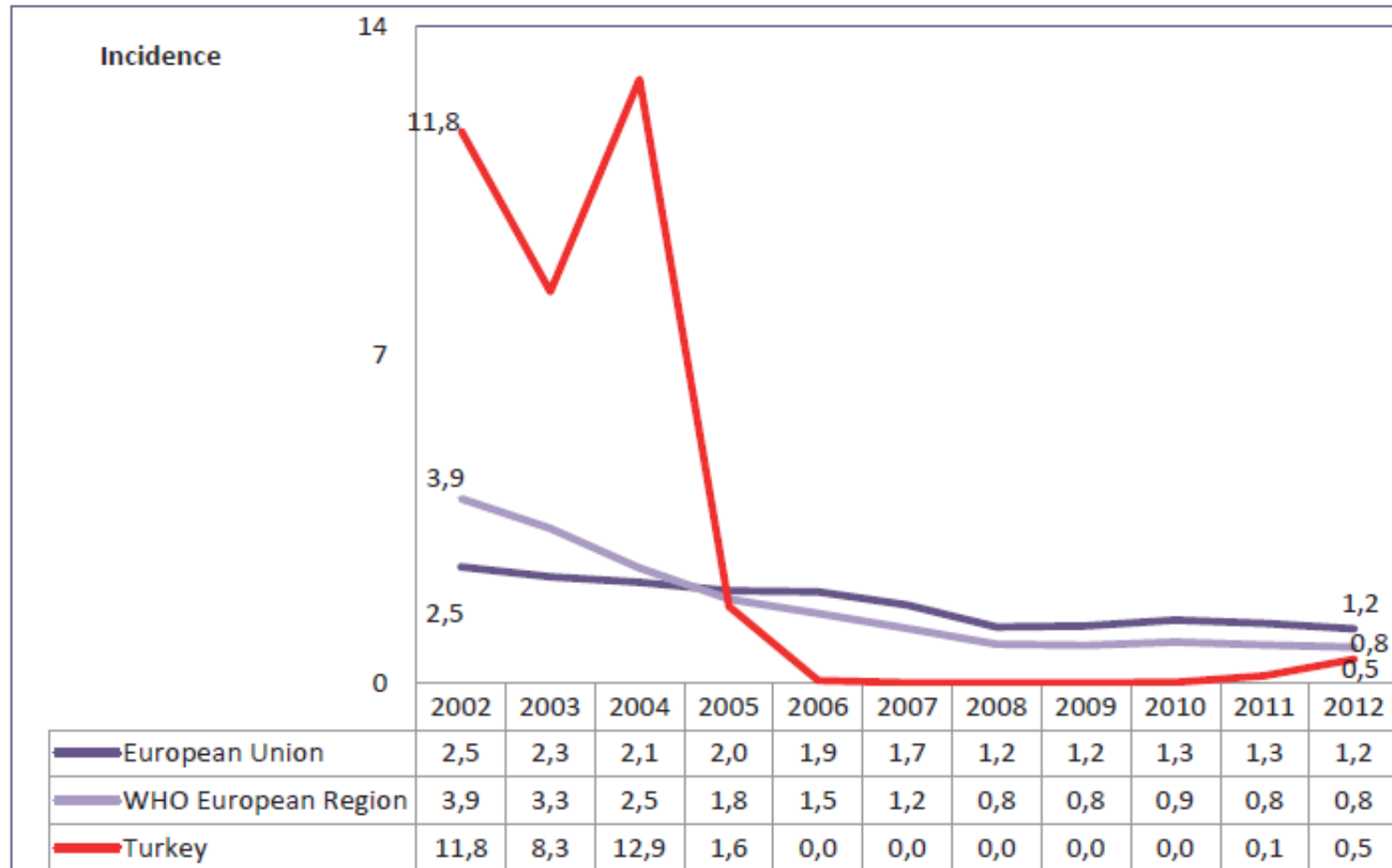
Leblebicioglu H & Ozaras R. Travel Med Infect Dis 2015;13:443-4

Petersen E and et al. Int J Infect Dis 2013; 17:e666-e667

Table 3. The communicable diseases in Syrian refugees between 2012 and 2015 recorded by Ministry of Health (<http://www.saglik.gov.tr/TR/dosya/1-100379/h/eng-yillik.PDF> , and <http://www.tkhk.gov.tr/Dosyalar/3ff2d5bc1d474b4cbddc2f77d4096b06.pdf>

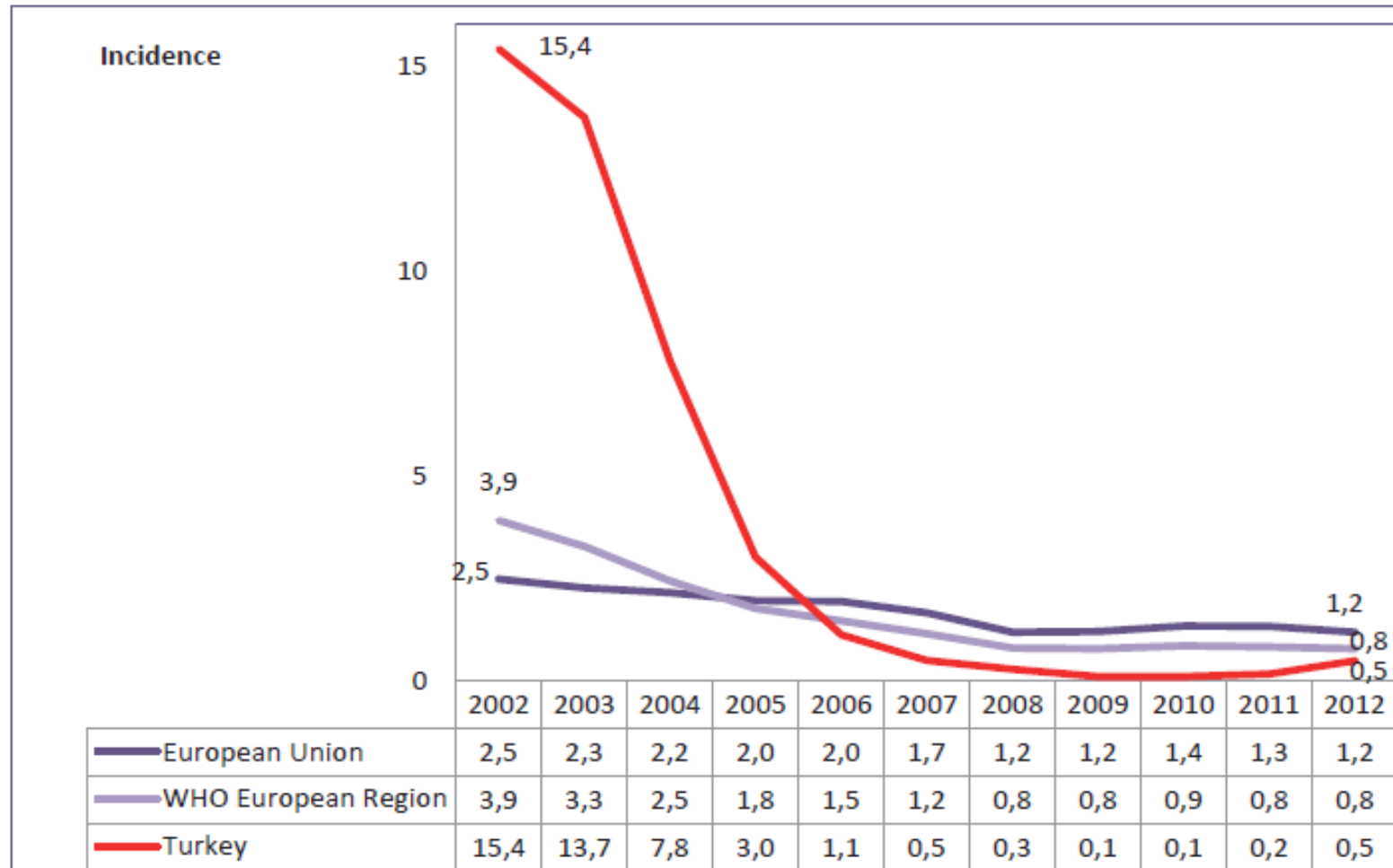
| Disease | Year | | | |
|------------------------------|--------|---------|---------|------------------------|
| | 2012 | 2013 | 2014 | 2015 |
| Diarrhea | 5 376 | 12 796 | 28 910 | 54 104 |
| Hepatitis A | 718 | 509 | 40 | 25 |
| Respiratory tract infections | 47 665 | 239 776 | 252 169 | 332 720 |
| Measles | 31 | 674 | 114 | 31 (first 4 months) |
| Tuberculosis | 261 | 491 | ? | 558 |
| Leaishmaniasis | 109 | 2835 | 1843 | 718 (first 10 months) |

Figure 3.2. International Comparison of Measles Incidence by Years, (per 100.000 Population)



Source: WHO HFA Database, Public Health Institution of Turkey

Figure 3.4. International Comparison of Malaria Incidence by Years, (per 100.000 Population)



Source: WHO HFA Database, Public Health Institution of Turkey

Main factors for limited access to health care service

- Barriers of language and communication
- Inexperience of hosting countries “medical staff”
- Cultural differences
- Lack of health coverage
- Over burdened health care system

Major infections problem

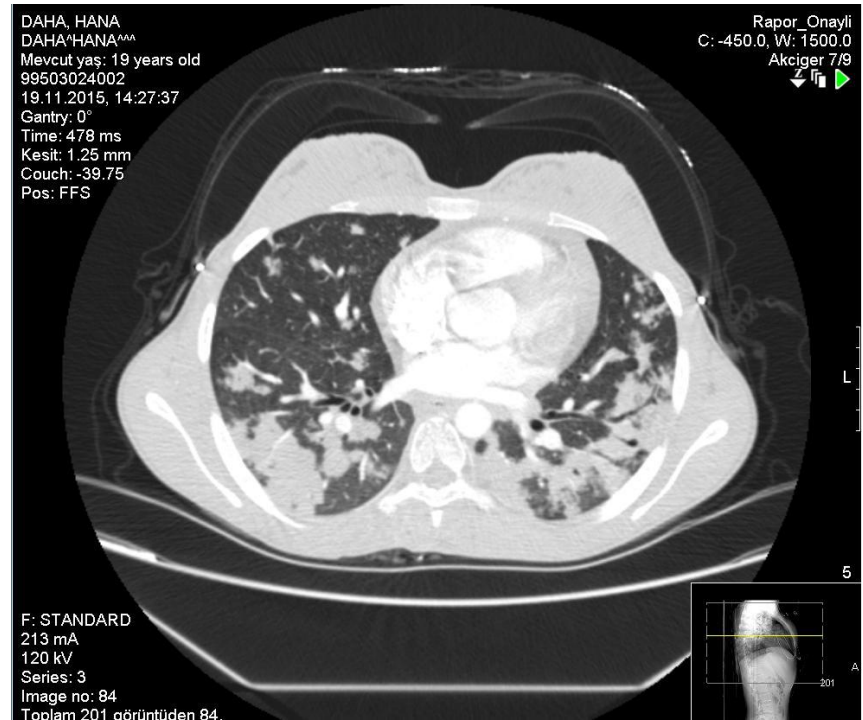
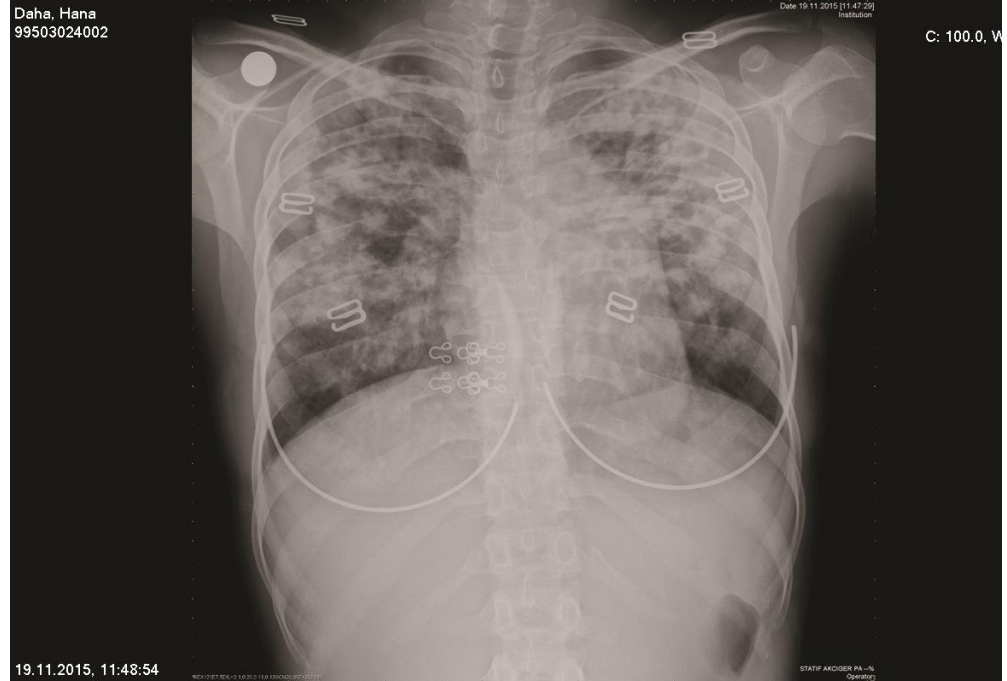
Re-emerging infections

- Polio
- Cholera
- Typhoid fever
- Tuberculosis
- Leishmaniasis
- Measles

Resistant bacterial infections

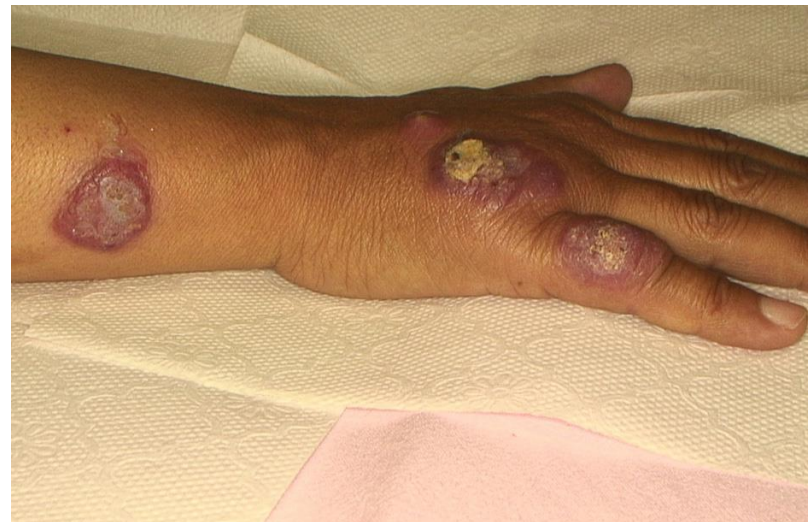
- Multidrug-resistant gram negative bacterial infections
 - ESBLproducers
 - Carbapenem resistant
 - NDM-1-producing
Acinetobacter baumannii

The patient, 19 year-old woman and a Syrian refugee. She had fever, weight loss and cough complains since 2 months. X-ray of chest and CT showed disseminated pulmonary tuberculosis . The patient was married and has one child in two year-old. She is living in a village around Urgup 60 km far from Kayseri. This family is working in a family farm and caring livestock.



Cutaneous Leishmaniasis

- Cutaneous Leishmaniasis in Turkey
 - 5,505 cases in refugee camps
- Increasing number of domestic cases in the region near Syria



Inci R et al. Med Sci Monit, 2015; 21: 2100-2104
Republic of Turkey Ministry of Health October, 2015

Measles in Turkey

- Measles was reported in 625 Syrian refugees in 2014
 - This caused a shift in national vaccination program and the booster of MMR vaccine was withdrawn from the first year of primary school to the preschool period
 - All Syrian children in the camps have been vaccinated

Gastrointestinal infections

- Patients with **cholera**, **typhoid fever** and **hepatitis A** have been reported in Syrian civilians
- **Typhoid fever** in Syrian refugees in Lebanon
- **Cholera** outbreak among the Syrian refugees in **Iraq**



Sharara SL, Kanj SS. PLoS Pathog. 2014;10:e1004438

<http://www.emro.who.int/irq/iraq-news/response-to-cholera-outbreak-stepped-up.html>

<http://www.promedmail.org>

Conclusions

Syrian Refugee Crisis-1

Biggest Humanitarian Emergency

- Need humanitarian aid and security;
 - 13.5 million people inside Syria
 - 4.8 million refugees



Emerging new threat

- Spreading resistant bacterial infections
 - MDR GNB
 - NDM-1 *A.baumannii*
 - MRSA
 - Others
- Tuberculosis,
- cutaneous leishmaniasis
- poliomyelitis
- Measles
- Typhoid fever
- Cholera
- Malaria
- West Nile virus infection

Conclusions-2

Syrian Refugee Crisis

BBC Sign in News Sport Weather Shop Earth Travel

NEWS

Home Video World UK Business Tech Science Magazine Entertainment & Art

World Africa Asia Australia Europe Latin America Middle East US & Canada

Kenya police 'foil anthrax attack' by 'IS-linked group'

4 May 2016 Africa

Biosecurity Risks

- Potentially intentional release biologic agents !!!
 - Traditional biologic agents (*B.anthraxis* spores, Smallpox virus etc.)
 - Enhanced biological agents



Kenyan police say they have foiled a "large-scale" biological attack using anthrax, by a terror group with links to so-called Islamic State (IS).

A man, his wife and another woman have been arrested. Rewards have been offered for two other men.

Police did not name the network, but said it stretches across the country and outside its borders, including to Somalia, Libya and Syria.

There was no immediate independent confirmation.

Immediate directions

- Improving living conditions of refugees
- Child vaccination programs, which slowed down, need to be supported
- Immunization coverage for refugees
- Increasing the amount of aid given to Syrian refugee camps
- Accepting more asylum seekers and increase support for refugee migrants

“It is not shameful to want the World to be a nice place where people live in peace and serenity”

