Migration and Health

Aspects and challenges while providing medical care for refugees

Dr.med. Ewelina Biskup

ESIM Winter School Riga 2017

A new problem?

The relationship between the international movement of people and diseases has been recognized since ancient times.

Historically, the focus has been mostly on:

- Risk of introduction of infectious diseases by migrants
- Cost associated with providing access to care to this population

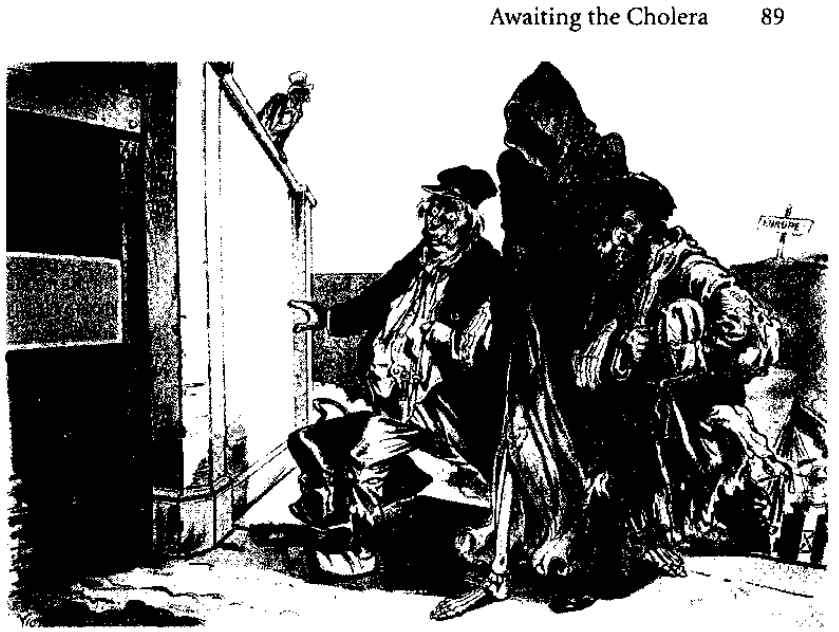


Figure 4.1. "They Come Arm in Arm." *Judge* 23 (1892).

Migration health

Migrant health, **refugee health** or **immigrant health**

is the field of study on the health effects

experienced by people who have moved to another area of the world,

either by choice or as a result of unsafe circumstances such as war.

focuses on:

- the health of migrants, and
- the health effects of migration on communities in countries of origin, transit and destination
  - Including s**econd** and later **generations**

Migration health

"Health is a state of complete physical, mental and social wellbeing ***of migrants*** and not merely the absence of disease or infirmity"
(Source: IOM, adapted from WHO, 1948)

Still, there is a limited view of "migrant health"

- (Infectious) disease screening and exclusion policies
- Policies regulating migrants' access to health and social benefits

Focus on migration and health

Driven by:

- Growth in the volume and frequency of international travel
- Increasing immigrant population in more-developed countries
- Migrant health disparities and unique needs
- Role of migration on emerging diseases of international health significance

Migration connects the health of communities in the countries of origin, transit and destination

“Globalizes health risks and outcomes” (Gushulack, 2009)

Migration and health

ORIGIN COUNTRY

Disease burden

Health risks:

- Vectors
- Food safety
- Sanitation
- Others

Health beliefs/behaviors

Health infrastructure

Others

Migration

International transfer or sharing of health risks

Health issues transcend national boundaries

cooperative actions

DESTINATION COUNTRY

Disease burden

Health risks:

- Vectors
- Food safety
- Sanitation
- Others

Health beliefs/behaviors

Health infrastructure

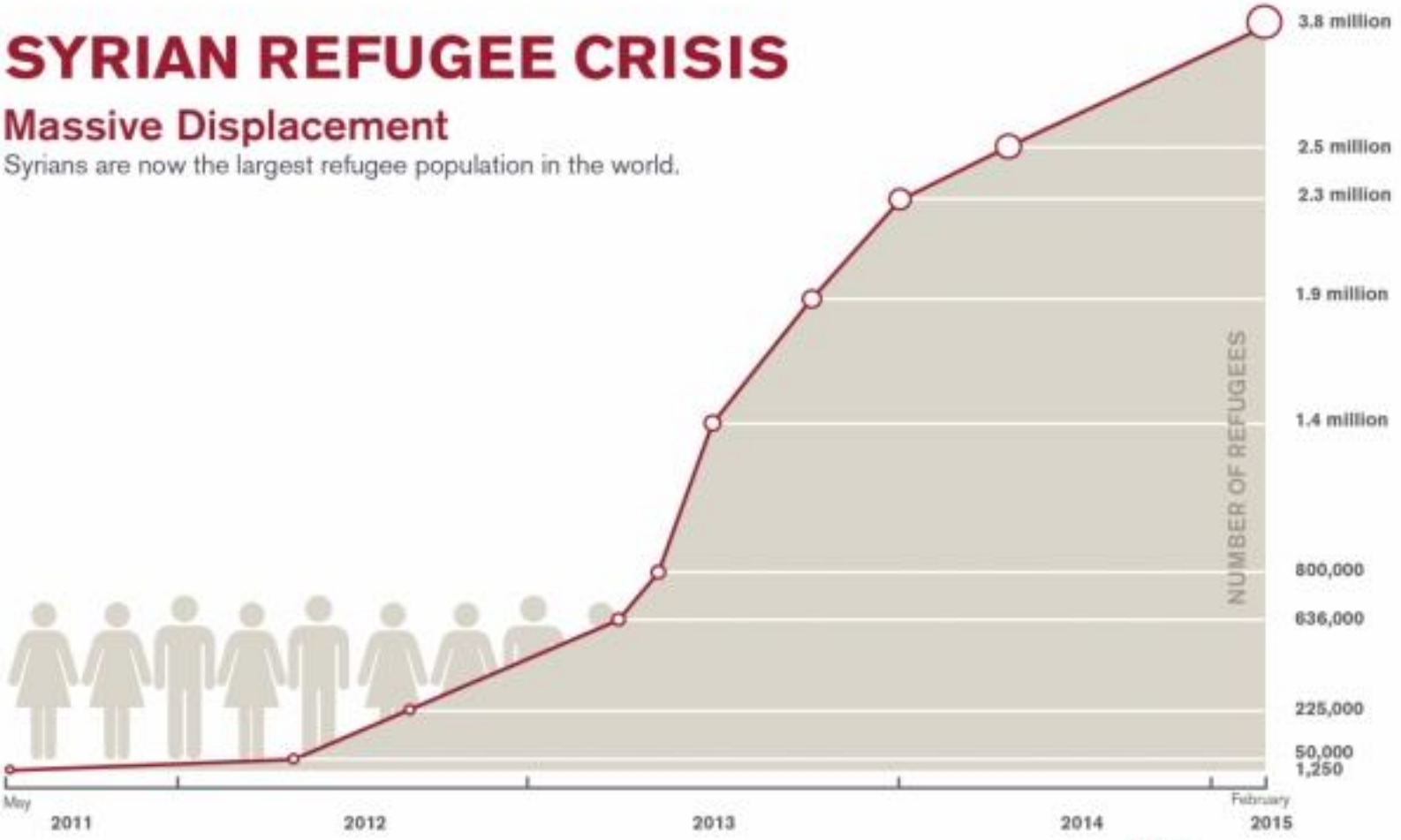
Others

Understanding the journey…

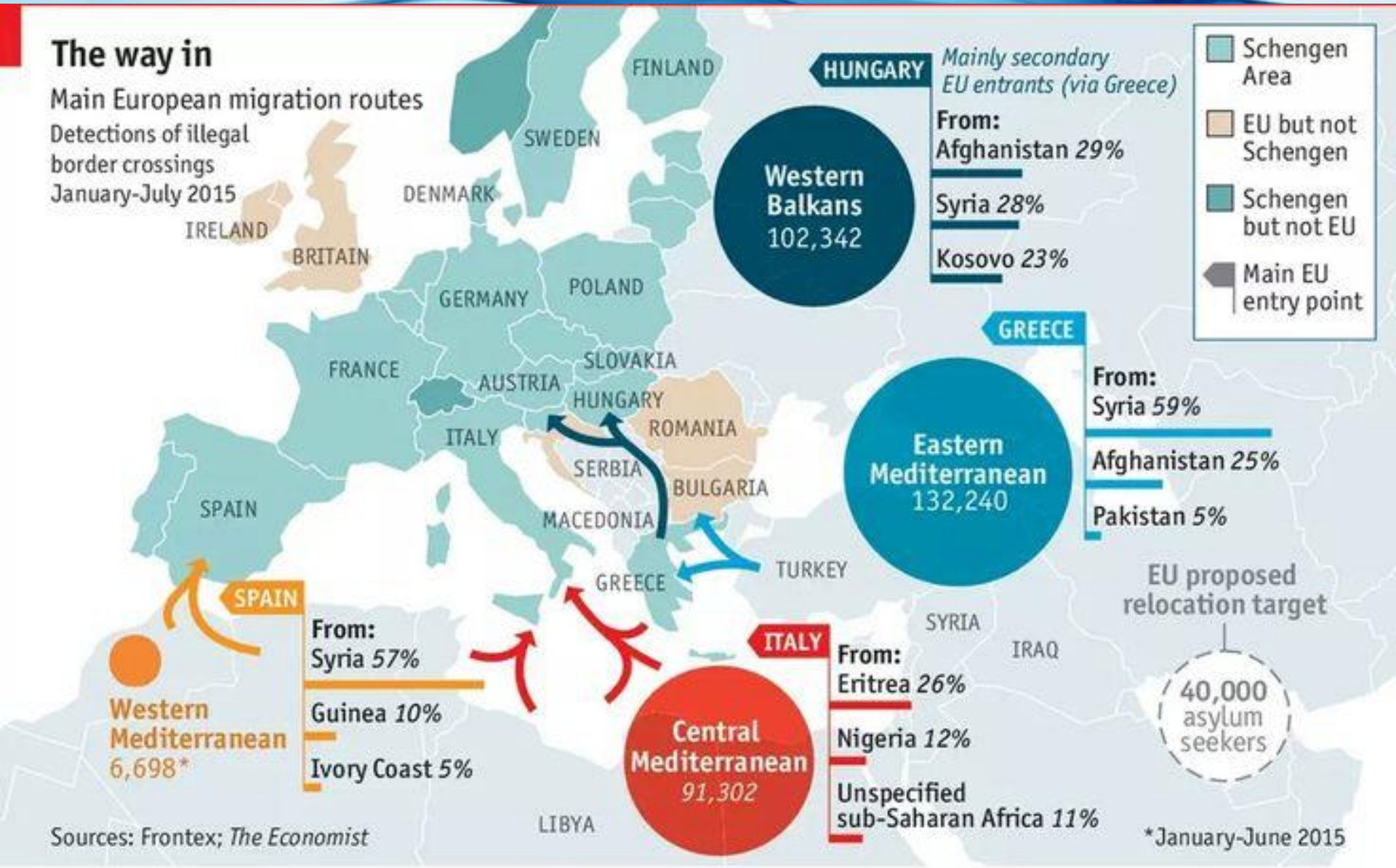
SYRIAN REFUGEE CRISIS

Massive Displacement

Syrians are now the largest refugee population in the world.

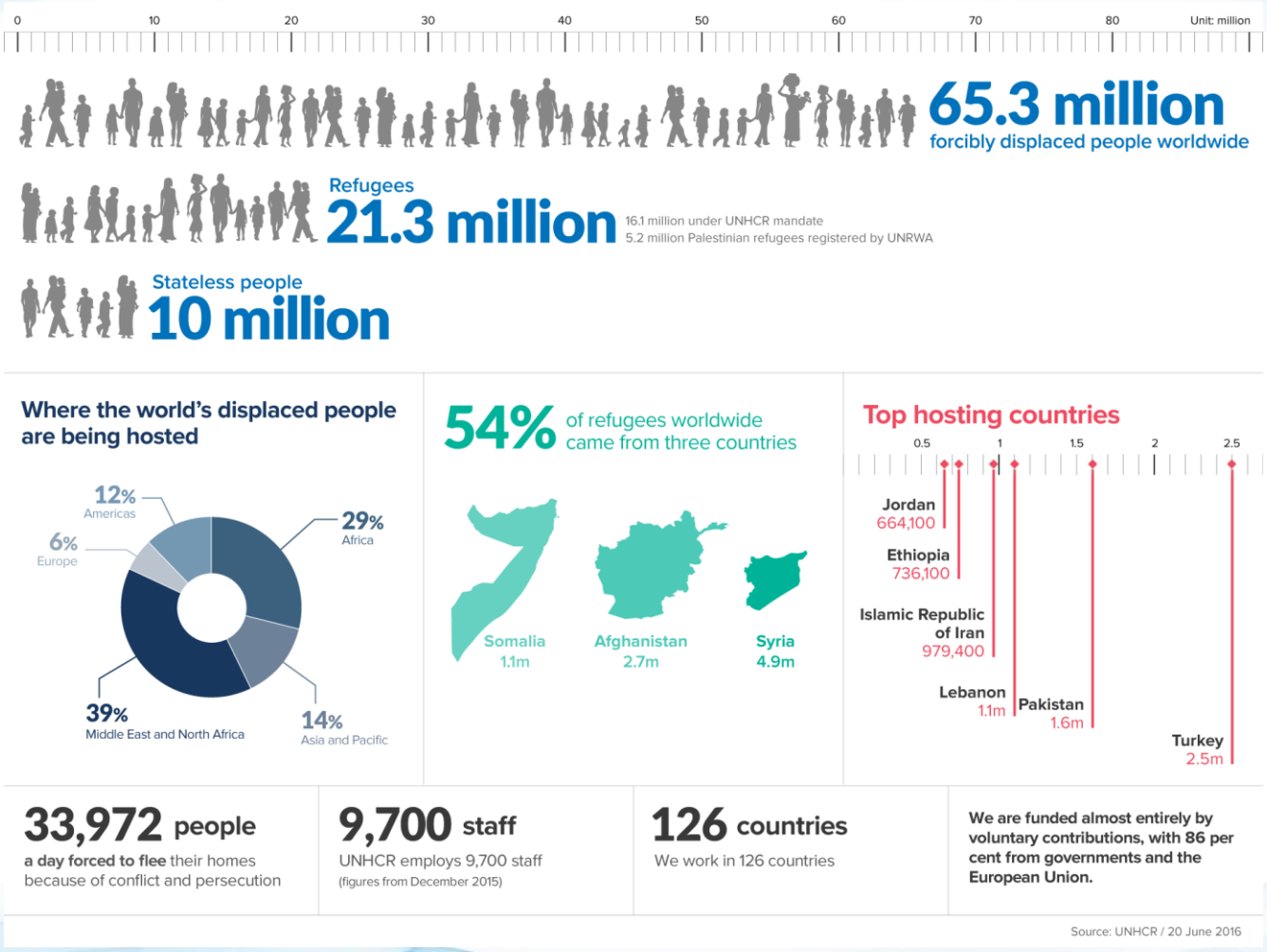


MercyCorps

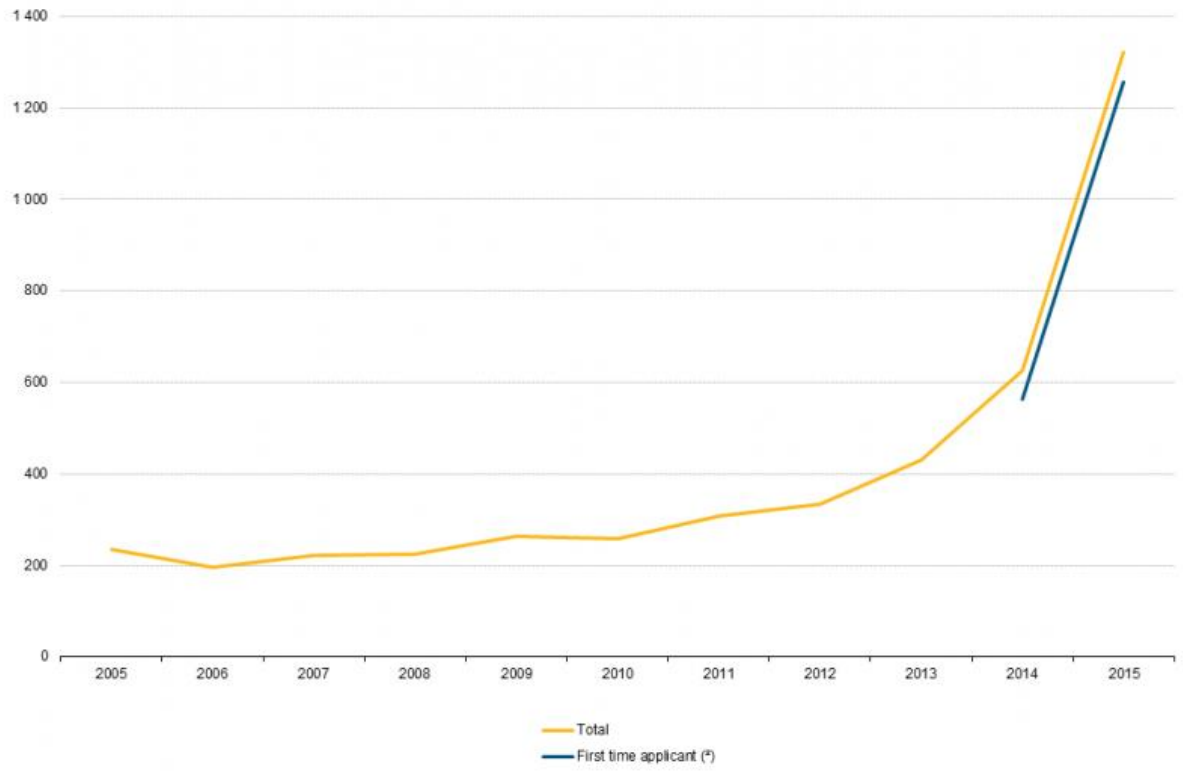


Economist.com

Status quo


0
10
20
30
40
50
60
70
80
Unit: million
65.3 million
forcibly displaced people worldwide
Refugees
21.3 million
16.1 million under UNHCR mandate
5.2 million Palestinian refugees registered by UNRWA
Stateless people
10 million
Where the world's displaced people are being hosted
12%
Americas
29%
Africa
6%
Europe
39%
Middle East and North Africa
14%
Asia and Pacific
54% of refugees worldwide came from three countries
Somalia
1.1m
Afghanistan
2.7m
Syria
4.9m
Top hosting countries
0.5
1
1.5
2
2.5
Jordan
664,100
Ethiopia
736,100
Islamic Republic of Iran
979,400
Lebanon
1.1m
Pakistan
1.6m
Turkey
2.5m
33,972 people
a day forced to flee their homes because of conflict and persecution
9,700 staff
UNHCR employs 9,700 staff
(figures from December 2015)
126 countries
We work in 126 countries
We are funded almost entirely by voluntary contributions, with 86 per cent from governments and the European Union.
Source: UNHCR / 20 June 2016

Asylum applications (non-EU) in the EU



(¹) 2005–07: EU-27 and extra-EU-27.
(²) 2005–2013: not available.
Source: Eurostat (online data codes: migr_asyctz and migr_asyappctza)

Refugee definition

Refugee: "a person who is unable or unwilling to return to his or her country of nationality because of persecution or a well-founded fear of persecution."

- Race
- Religion
- Nationality
- Political opinion
- Membership in a particular social gro

The Phases

- Preparatory (Pre-escape)
- Migration (Escape)
- Stay in a refugee camp
- Overcompensation
- Intergenerational and cultural conflict stage
- Decompensation
  - Voluntary repatriation
  - Local integration
  - Resettlement in another country

Information from Sluzki CE. Migration and family conflict. Fam Process 1979;18:379-90.

The Phases

Individual factors

- Biology and genetics (eg., sex, immunity)
- SES
- Physical environment (e.g., housing, work)

-Health beliefs/behaviors
-Pre-existing health
-Access to healthcare

Country of Origin/Destination/Transit

Disease prevalence

Health risks:

- Vectors
- Food safety
- Sanitation
- Others

Health infrastructure

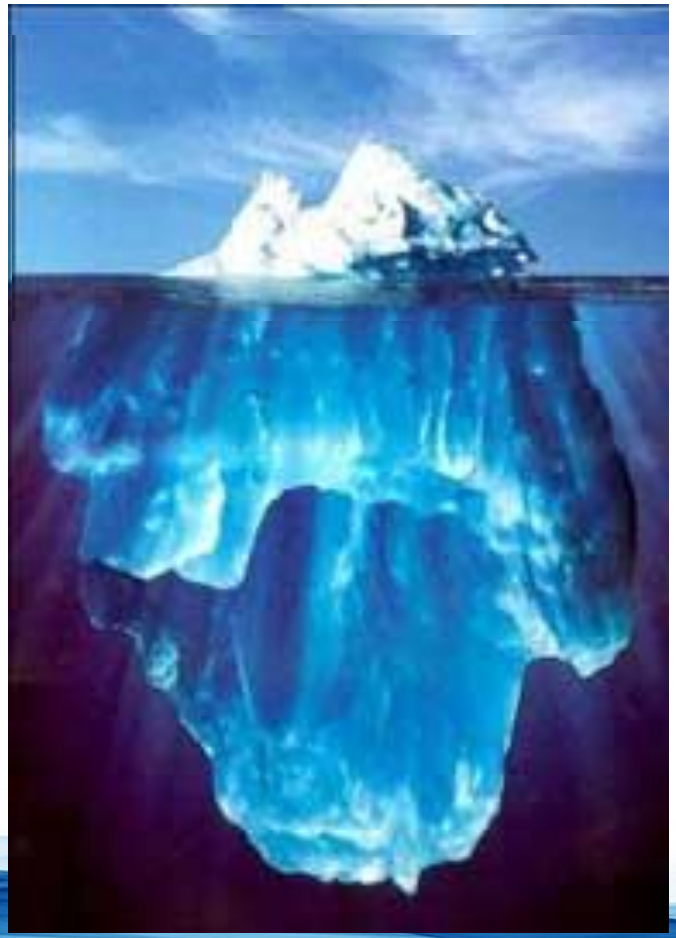
Social setting, status

Language

Journey factors

- Migratory status
- Economic resources
- Mode and quality of transportation
- Duration of the journey
- Regions of travel
  - Environment
  - Health risks
  - Safety

Health care



External

Internal

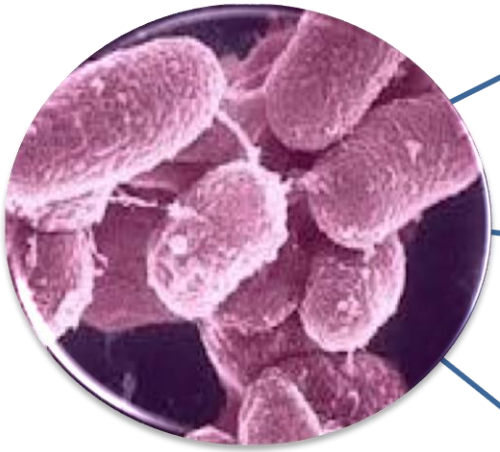

Food
Music
Language
Visual Arts
Festivals
Performing Arts
Literature
Holiday Customs
Flags
Games
Dress
Nature of Friendship
Values
Religious Beliefs
Notions of Beauty
Body Language
Norms
Etiquette
Rules
Gender Roles
Expectations
Learning Styles
Leadership Styles
Attitudes towards Social Status
Notions of 'Self'
Perceptions
Attitudes towards Age
Notions of Modesty
Thought Processes
Views on Raising Children
Concept of Fairness
Importance of Space
Approaches to Problem Solving
Notions of Cleanliness
Importance of Time
Assumptions

Not only symptoms…

- Boredom
- Shock
- Depression
- Anger
- Hope mingled with disappointment
- Adjustment to new living conditions
- Hopelessness
- Fear of the unknown
- Culture shock
- Survivor's guilt
- Helplessness
- Powerlessness
- Self-doubt
- Struggle to meet survival needs
- Confusion

Migration and health

Infections

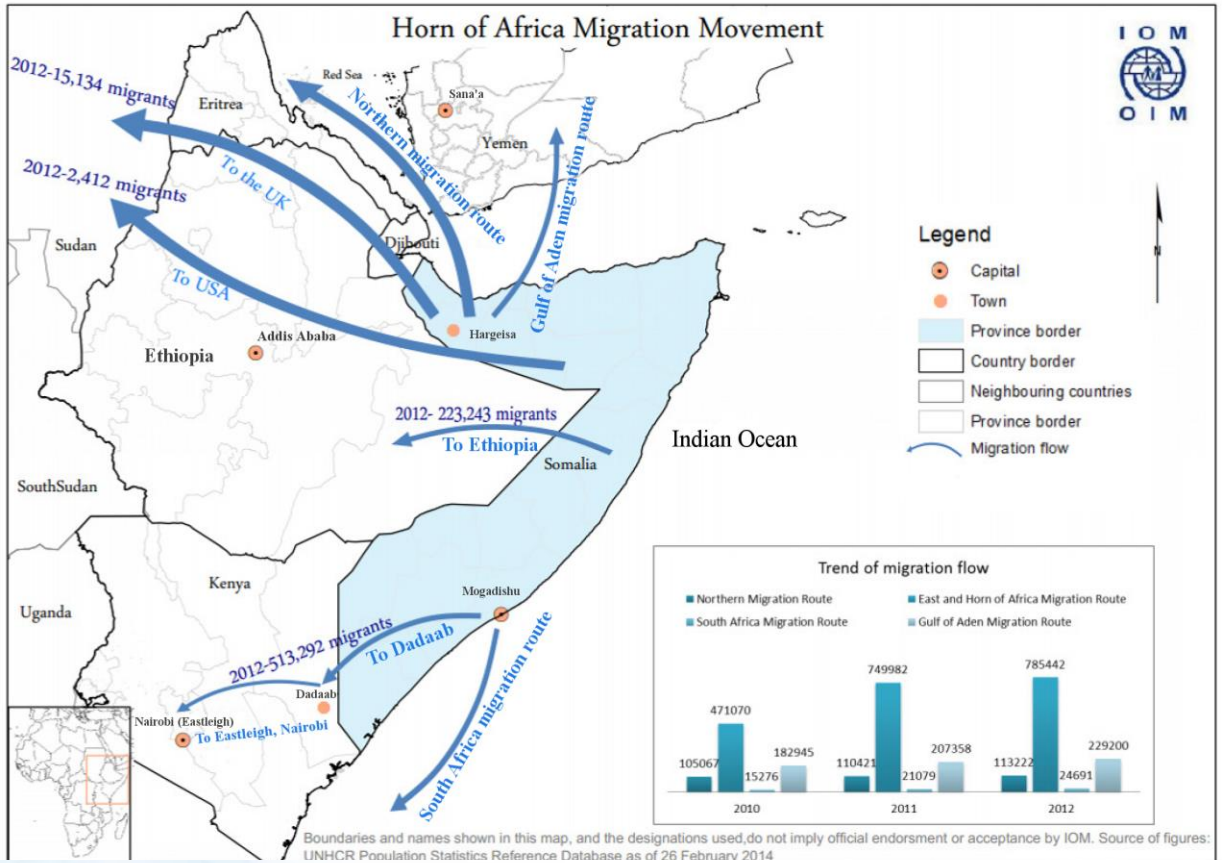


Endemic

Preventable

Induced by the jjourney

Migration and health

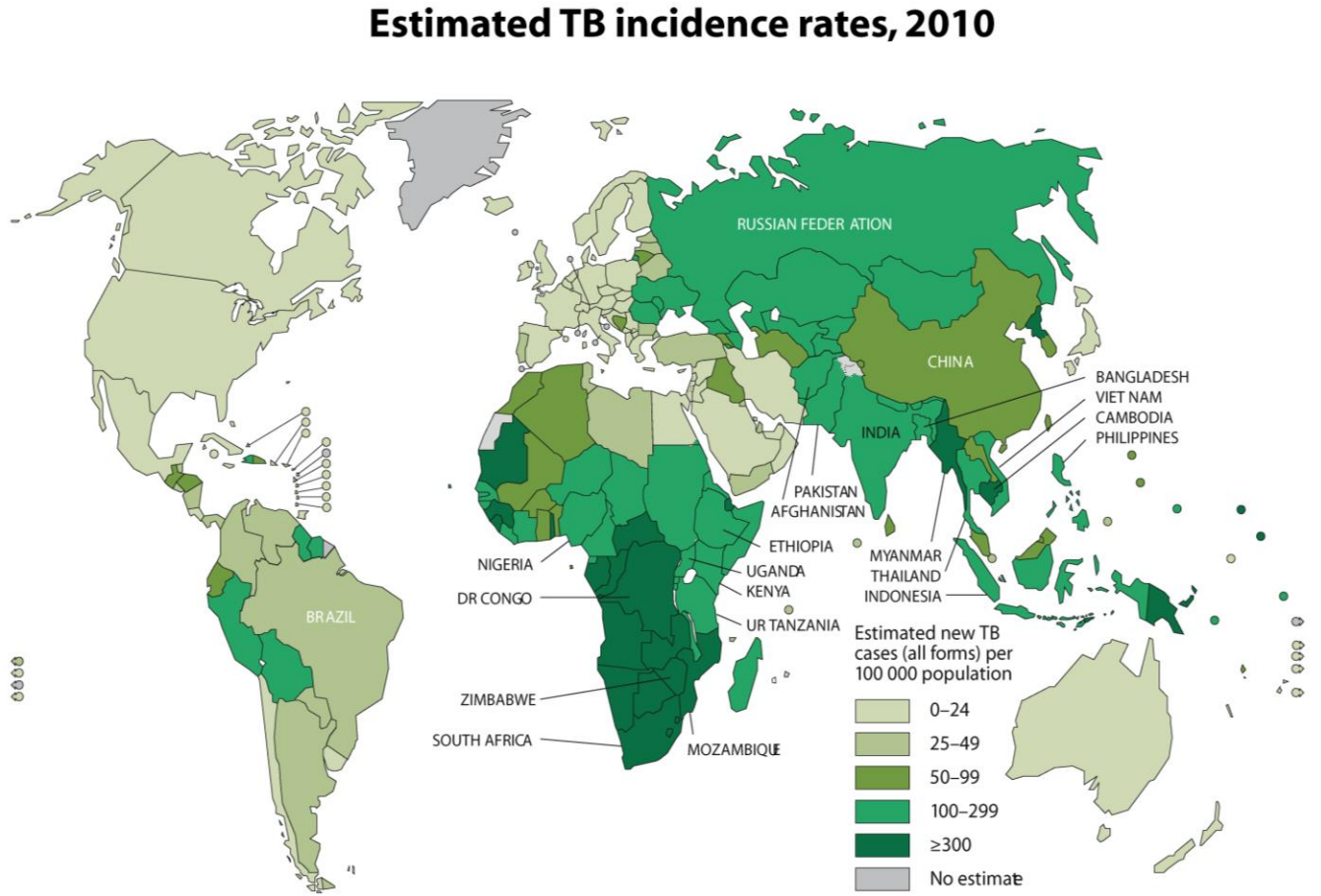


Multidrug-resistant tuberculosis (MDR TB) and other deadly infectious diseases commonly occur in states suffering from political turmoil and armed conflict.

The same conditions that promote MDR TB and other diseases often diminish the capacity of the public health system to address these needs, leading patients to seek care in other countries.

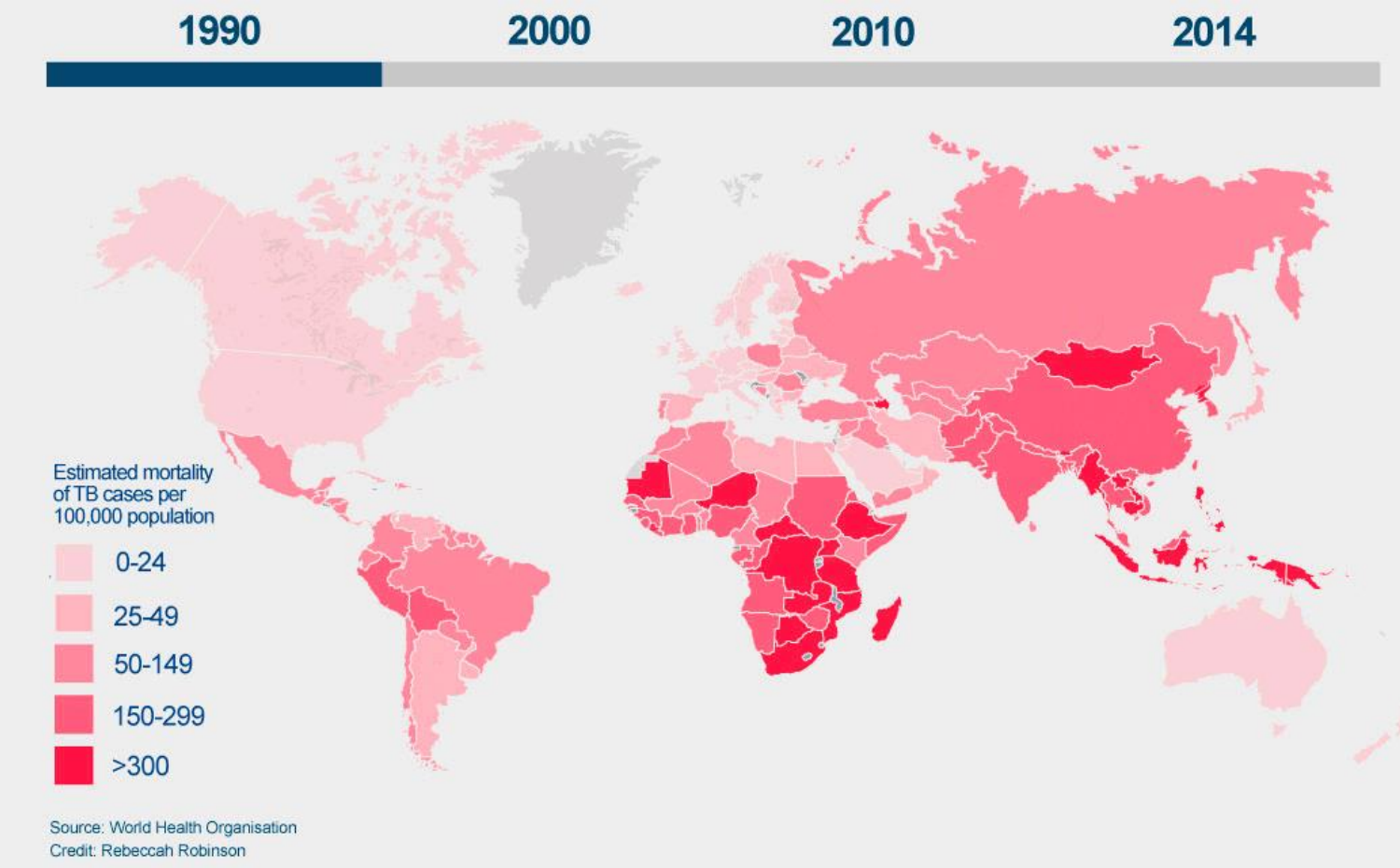
Cain et al., 2015

Tuberculosis

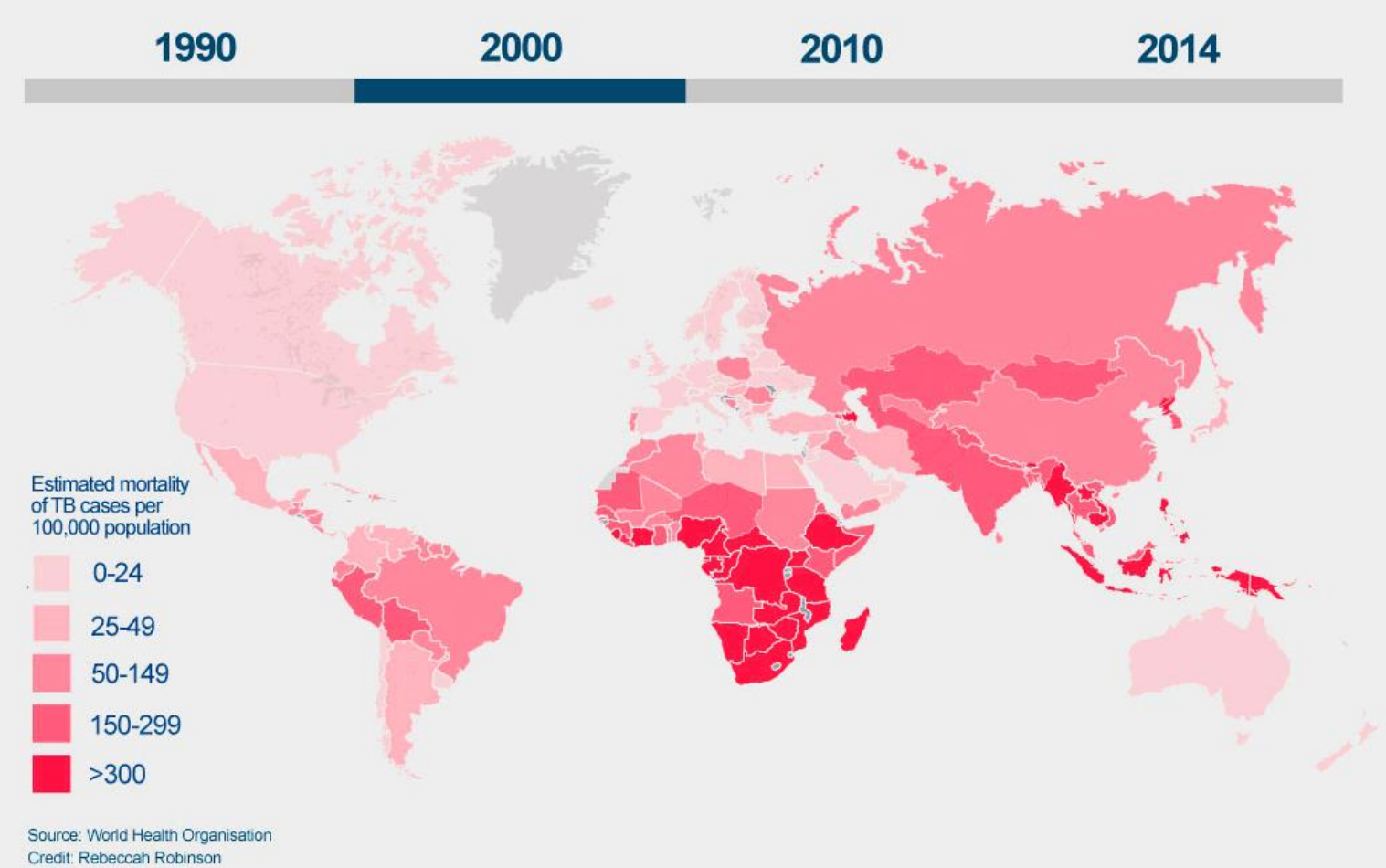


Tuberculosis

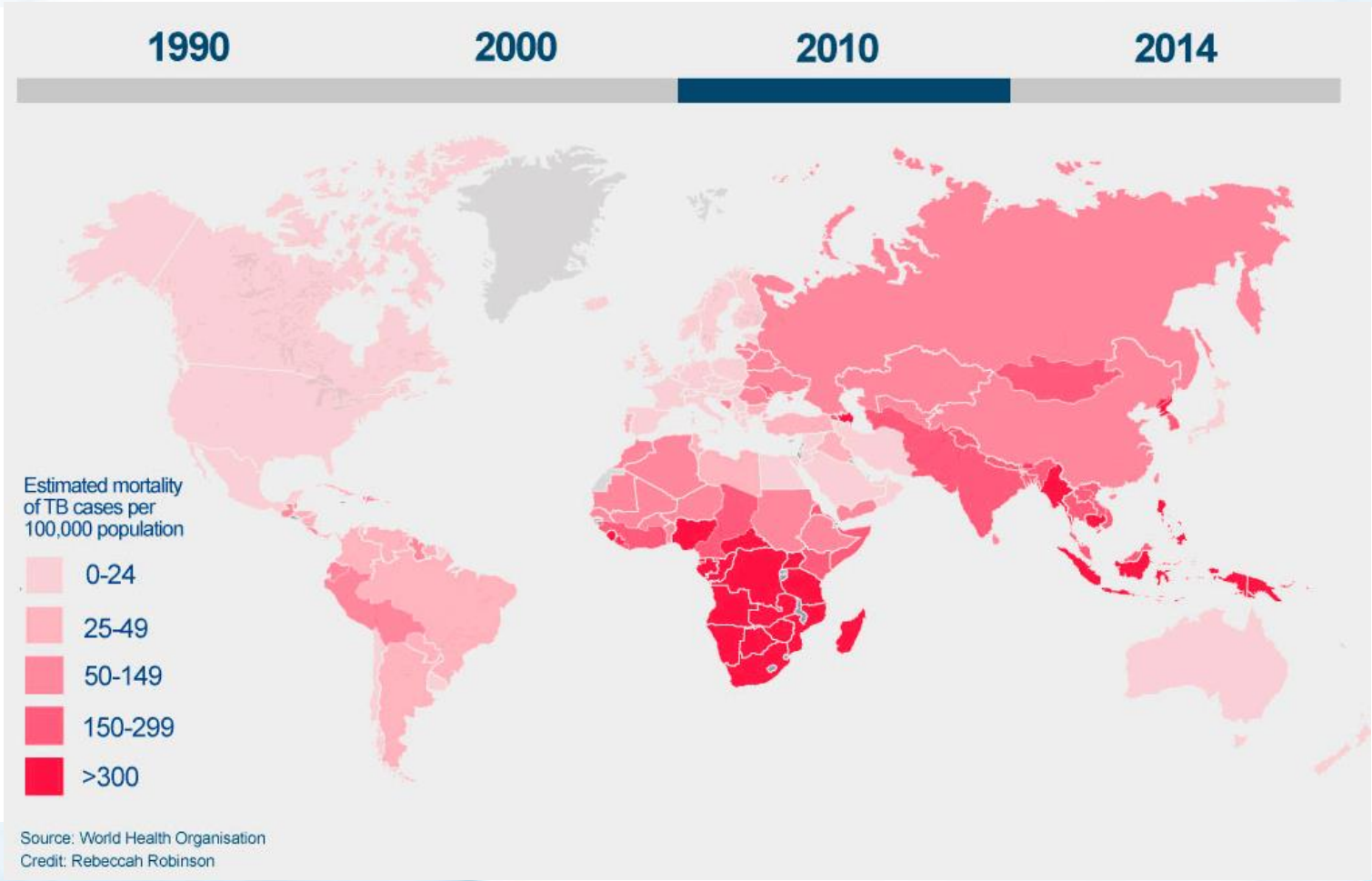
Global incidence rates of TB



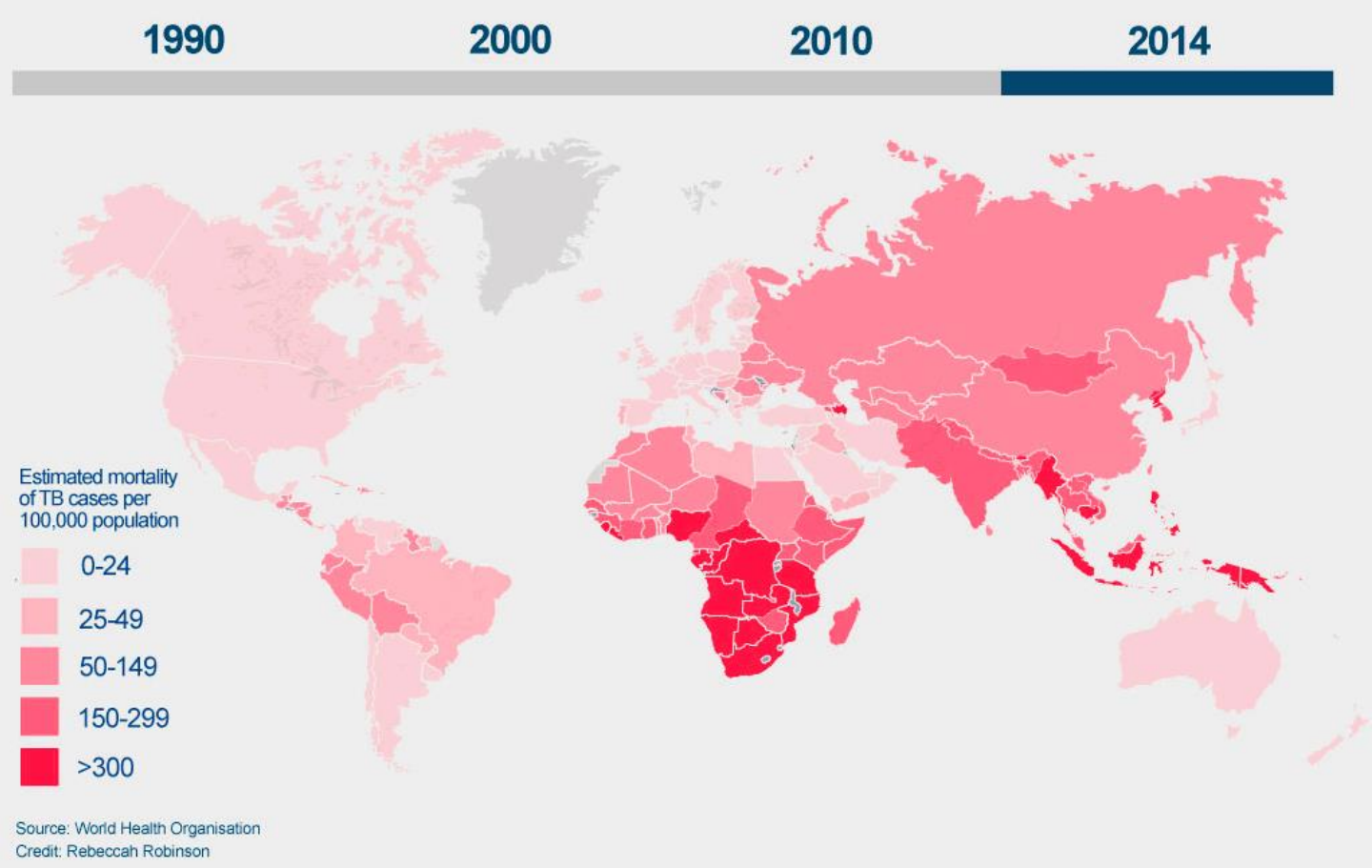
Global incidence rates of TB



Global incidence rates of TB



Global incidence rates of TB



TB screening survey

Country of origin

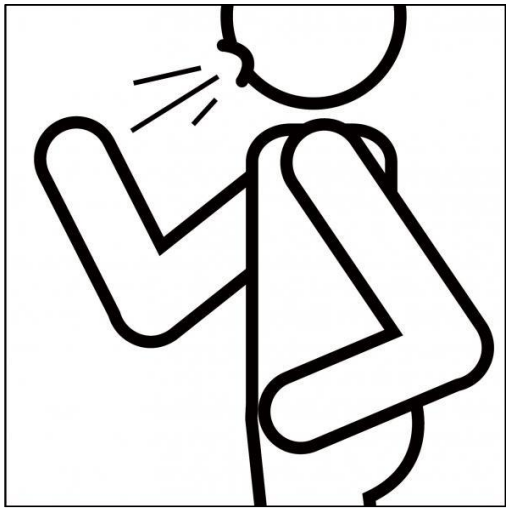
Kazakhstan / Kyrgyzstan / Moldova / Swaziland / Tibet -> **10p**

Angola / Armenia / Azerbaijan / Belarus / Djibouti / Gabon / Georgia / North Korea / Lesotho / Lithuania / Marshall Islands / Mozambique / Namibia / Papua New Guinea / Philippines / Russia / Sao Tome and Principe / Somalia / South Africa / Tajikistan / Ukraine / Uzbekistan -> **8p**.

Do you smoke?

◯ Yes ✓

◯ No ✗



Do you have a cough?

◯ Yes ✓

◯ No ✗

TB screening survey

Country of origin

Kazakhstan / Kyrgyzstan / Moldova / Swaziland / Tibet -> **10p**

Angola / Armenia / Azerbaijan / Belarus / Djibouti / Gabon / Georgia / North Korea / Lesotho / Lithuania / Marshall Islands / Mozambique / Namibia / Papua New Guinea / Philippines / Russia / Sao Tome and Principe / Somalia / South Africa / Tajikistan / Ukraine / Uzbekistan -> **8p**.

How long have you had the cough?

- ◯ Have you been coughing for more than 3 weeks? ✓
- ◯ Have you been coughing for less than 3 weeks? ✗
- ◯ Don't know ?

Have you coughed up any phlegm?

- ◯ Yes ✓
- ◯ No ✗
- ◯ Don't know ?

TB screening survey

Country of origin

Kazakhstan / Kyrgyzstan / Moldova / Swaziland / Tibet -> **10p**

Angola / Armenia / Azerbaijan / Belarus / Djibouti / Gabon / Georgia / North Korea / Lesotho / Lithuania / Marshall Islands / Mozambique / Namibia / Papua New Guinea / Philippines / Russia / Sao Tome and Principe / Somalia / South Africa / Tajikistan / Ukraine / Uzbekistan -> **8p**.

Have you lost weight over the last 3 months?

◯ Yes ✓

◯ No ×

◯ Don't know ?

Do you sweat at night?

◯ Yes ✓

◯ No ×

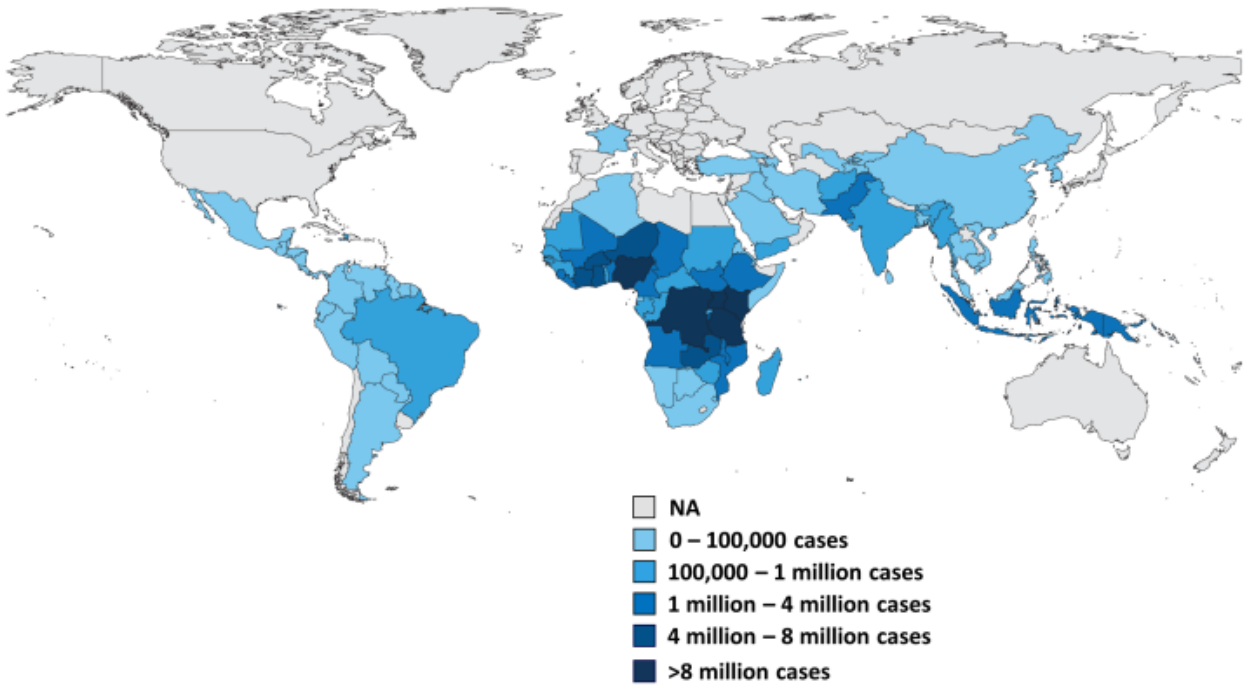
◯ Don't know ?

10 points -> check for Tb

http://www.tb-screen.ch/app/pdfoutput/secondex__en-US_de-CH.pdf

Malaria

Reported Malaria Cases, 2013



SOURCE: Kaiser Family Foundation, http://kff.org/globaldata/, based on WHO, World Malaria Report 2014; December 2014.

THE HENRY J. KAISER FAMILY FOUNDATION

Malaria

Roggelin *et al. Malar J (2016) 15:325*
DOI 10.1186/s12936-016-1366-7

Malaria Journal

RESEARCH Open Access

Sharp increase of imported *Plasmodium vivax* malaria seen in migrants from Eritrea in Hamburg, Germany

Louise Roggelin[1*], Dennis Tappe[2], Bernd Noack[2], Marylyn M. Addo[1,3], Eg

Abstract

Background: Since 2014, a considerable increase in *Plasmodium vivax* mala
majority of cases was seen in Eritrean refugees.

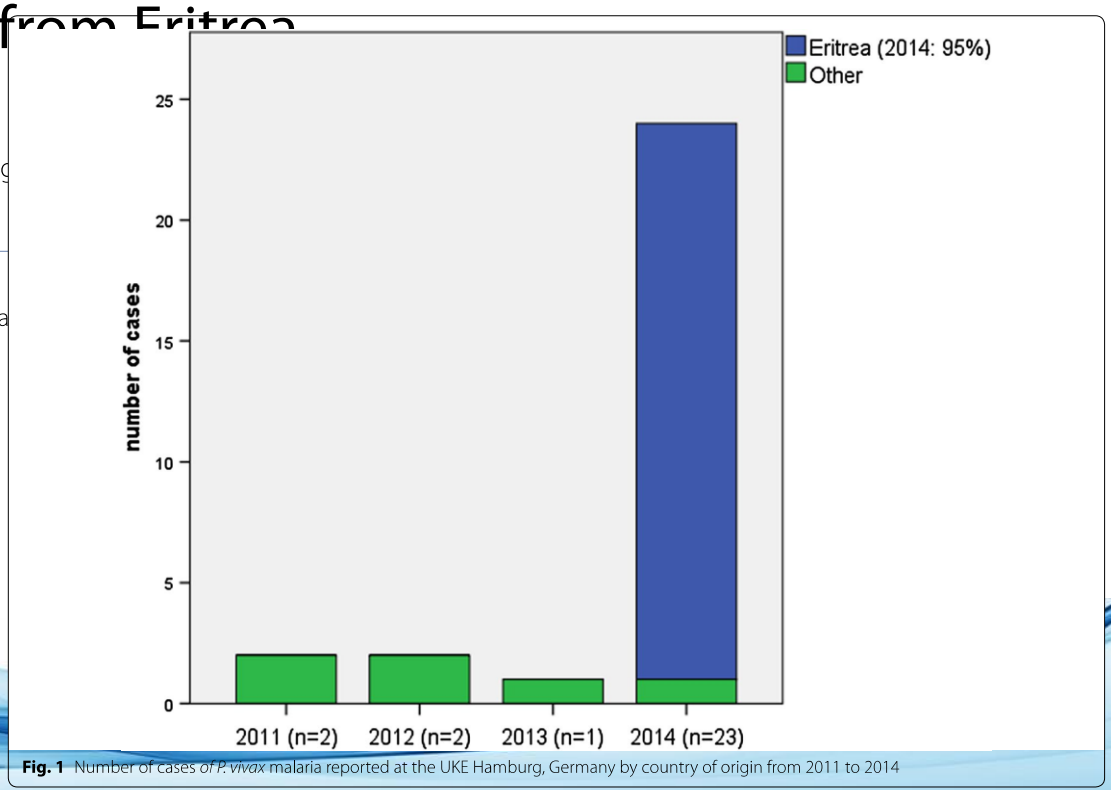
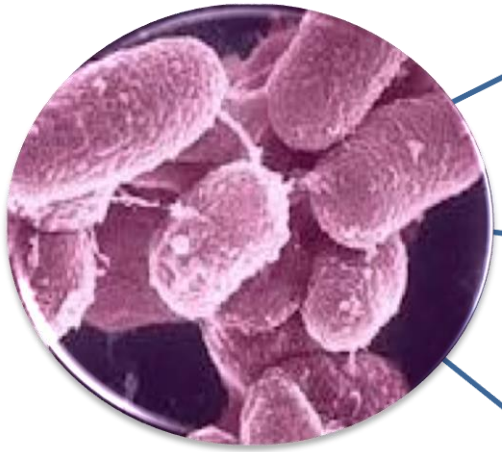


Fig. 1 Number of cases of *P. vivax* malaria reported at the UKE Hamburg, Germany by country of origin from 2011 to 2014

Migration and health

Infections



Endemic

Preventable

Induced by the jjourney

Migration and health

Migration and health

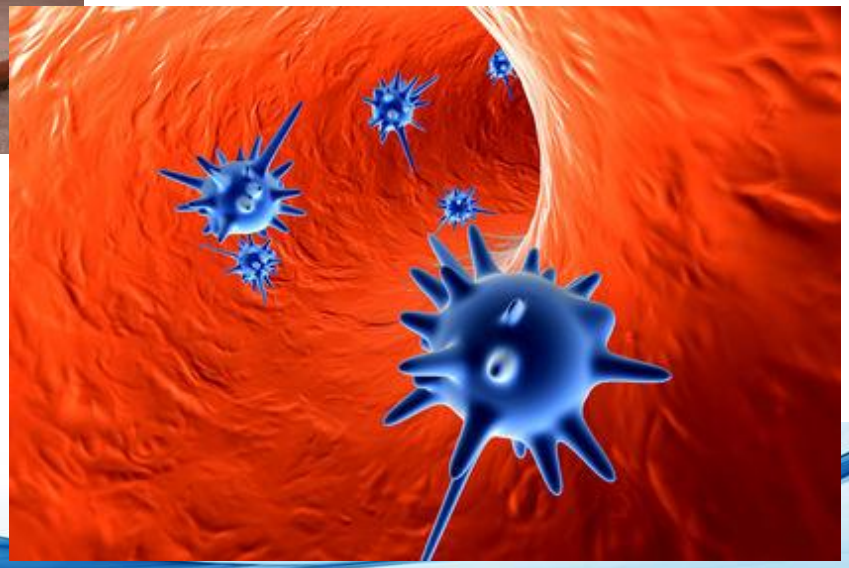
Measles

- 2013 WHO number of confirmed measles cases in Syria: 139 (no documented cases in 2010 and 2011).

- 2014 measles: over 7,000 confirmed cases.

- Also refugees in neighboring countries, even among highly vaccinated populations:
  - Jordan 24 cases in 2012, >**200** cases in 2013
  - Lebanon 9 cases in 2012, **1,760** cases in 2013.

Migration and health



Migration and health

Polio

-2013 saw Syria's first outbreak of polio since 1999.

-April 2015 WHO report: 35 children were subsequently paralysed by polio.

Migration and health

Polio in Syria

Published Online
January 31, 2014
http://dx.doi.org/10.1016/
S0140-6736(14)60132-X

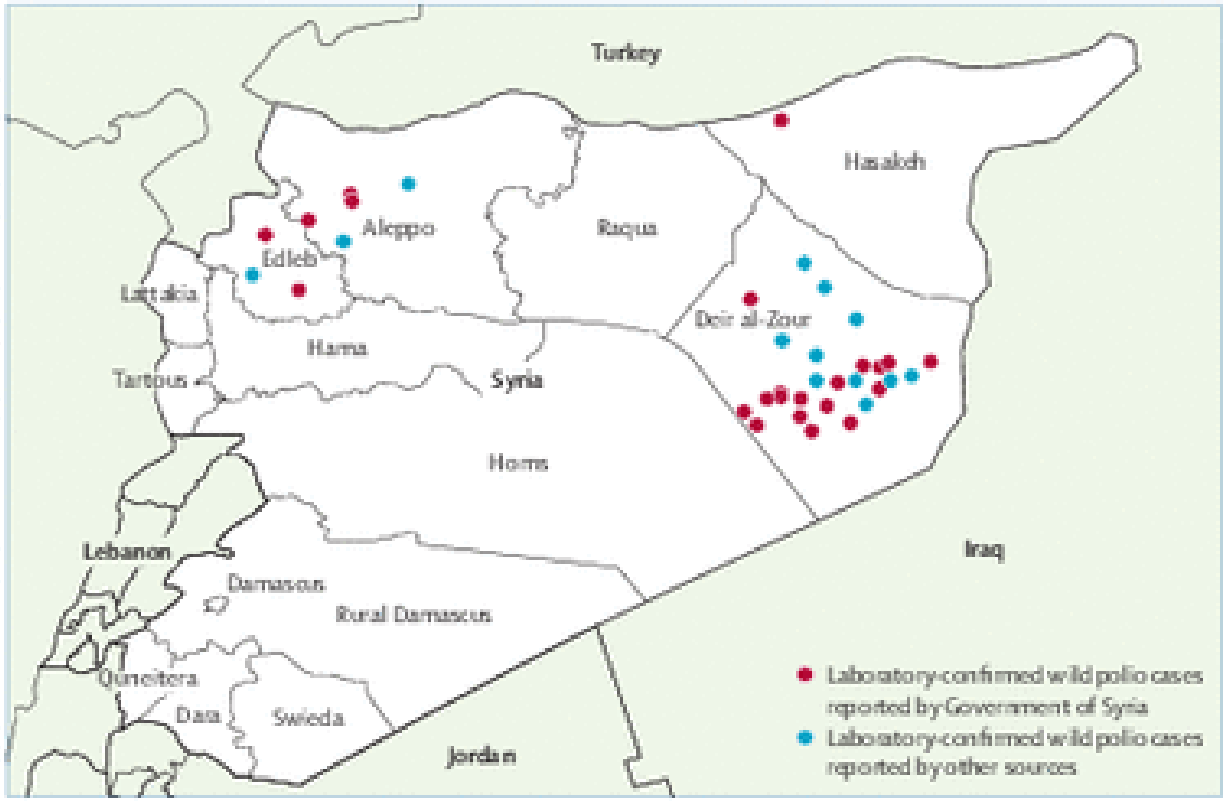


Figure: Laboratory-confirmed cases of polio in Syria, from July, 2013, to January, 2014

R Bruce Aylward, Ala Alwan, Lancet 2014; WHO 2014

Migration and health

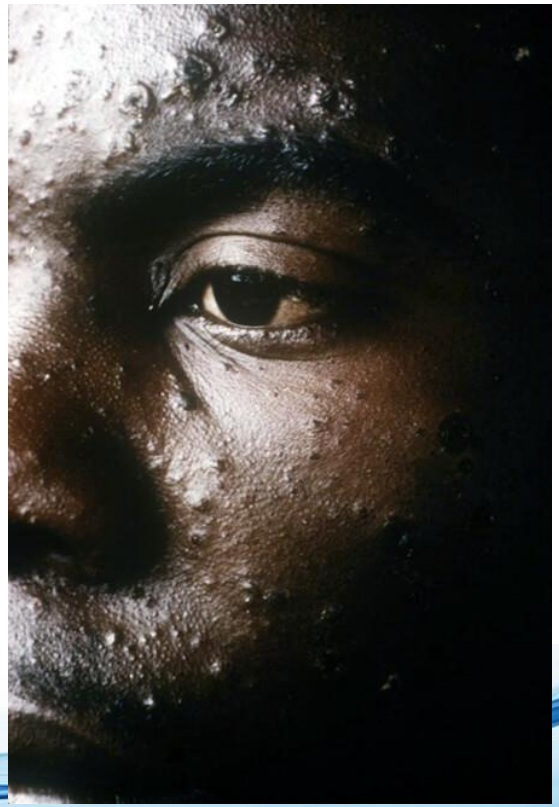
	NUMBER OF COMMUNICABLE DISEASE CASES REPORTED PER YEAR													
	Syrian Arab Republic[a]				Lebanese Republic[c]				Syrian Refugees in Lebanon[c]		Hashemite Kingdom of Jordan[d]			
	2011	2012	2013	2014	2011	2012	2013	2014*	2013	2014*	2011	2012	2013	2014
Poliomyelitis	0	0	35[b]	1[b]	0	0	0	0	0	0	0	0	0	n/a
Measles	n/a	13	n/a	n/a	9	9	1760	219	232	92	30	24	205	n/a
Cutaneous Leishmaniasis	n/a	52,982	n/a	n/a	5	2	1033	381	998	364	136	103	146	n/a
Hepatitis A	n/a	2203	n/a	n/a	448	757	1551	738	220	127	418	509	1082	n/a
Typhoid Fever	n/a	1129	n/a	n/a	362	426	407	102	21	7	2	4	4	n/a

[a]Data obtained from the Syrian Ministry of Health website in the Quarterly Report of Communicable Diseases [30].
[b]Data obtained from the Global Polio Eradication Initiative website [16].
[c]Data obtained from the Epidemiologic Surveillance Department of the Lebanese Ministry of Public Health [26].
[d]Data obtained from the Communicable Diseases System on the Jordan Ministry of Health Website [25].
[e]2014 Data last reported on 08/13/14 from the Global Polio Eradication Initiative website [16].
* 2014 Data last reported on 08/01/14 from the Epidemiologic Surveillance Department of the Lebanese Ministry of Public Health [26].
doi:10.1371/journal.ppat.1004438.t001

Sharara SL, Kanj SS (2014) War and Infectious Diseases: Challenges of the Syrian Civil War. PLOS Pathogens 10(11): e1004438. doi:10.1371/journal.ppat.1004438
http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1004438

PLOS | PATHOGENS

Migration and health



Migration and health

Varicella

- Danger: outbreaks in asylum centers
- Shared accommodation, overcrowded centers
- Lower penetrance in CoO

History of varicella **is not** a reliable predictor of presence or absence of varicella antibody in refugees.

To protect individuals with negative histories of clinical varicella:

- **immediate immunization** or
- **serotesting** followed by
- **immunization of susceptible individuals**.

Comparison of varicella history with presence of varicella antibody in refugees. Christiansen 2004

Migration and health

Vaccines Given to Eligible U.S.-Bound Refugees	
Birth-adult	HepB x 2[1]
6 wks-<15 wks	Rotavirus x 2 (maximum age for dose 2 is 8 mos)
6 wks-<5 yrs	Hib (x 2 if <15 mos; x1 if 15 mos-5 yrs)[2]
	PCV-13 (x 2 if <2 yrs; x1 if 2-5 yrs)[3]
6 wks -<7 yrs	DTP x 1[4]
6 wks-<11 yrs	Polio x 2 doses (OPV, IPV, or one of each)
7 yrs-adult	Td x 2
≥ 1 yr-born ≥ 1957	MMR x 2

1 Refugees are tested for hepatitis B virus infection (HBsAg) prior to vaccination, and are vaccinated only if negative (and if a dose is due).
2 One dose of Hib vaccine is recommended for unimmunized asplenic persons regardless of age, and for unimmunized HIV-positive patients up to age 18 years.
3 When available, PCV–13 will be given to children 6 wks -<5 yrs of age. A second dose will be given to children up to age 2 yrs. One dose of PCV-13 will also be recommended for all immunocompromised persons, regardless of age.

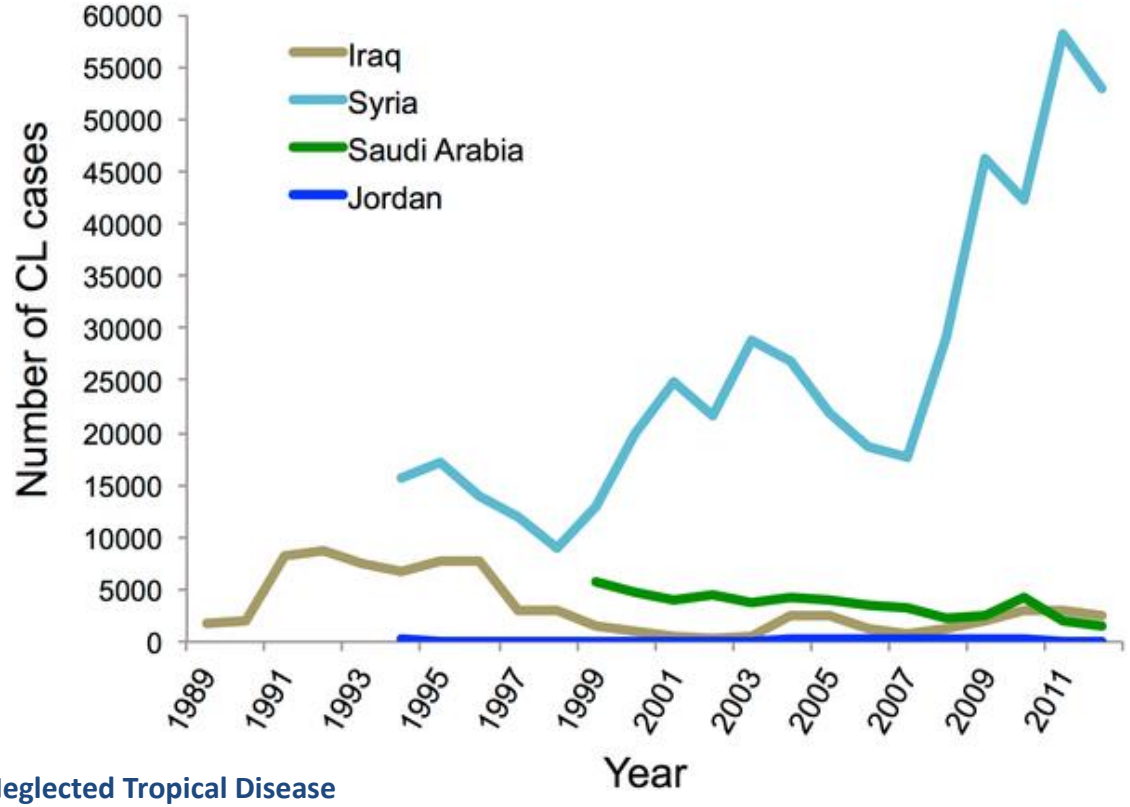
Migration and health

Migration and health

Leishmaniasis

Migration and health

Year-wise trend of CL cases reported in Middle East



Salam et al 2014, PLOS Neglected Tropical Disease

Du R, Hotez PJ, Al-Salem WS, Acosta-Serrano A (2016) Old World Cutaneous Leishmaniasis and Refugee Crises in the Middle East and North Africa. PLOS Neglected Tropical Diseases 10(5): e0004545. doi:10.1371/journal.pntd.0004545
http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004545

Migration and health

Leishmaniasis

"We may be witnessing an epidemic of historic and unprecedented proportions, but it has largely been hidden due to lack of specific information."

"(…) the number of cases of CL (cutaneous leishmaniasis) has most likely been severely underreported"

"(…) a lack of disease awareness and public policies for treatment and prevention".

-leishmaniasis is now affecting hundreds of thousands of refugees and has spread to Iraq, Lebanon, Jordan, Libya and Yemen.

-In Yemen alone, 10,000 new cases have been reported annually.

-Clinical suspicion is the key to diagnosis!

"War and Infectious Diseases: Challenges of the Syrian Civil War", PLOS pathogens, 2014, Sima L. Sharara, Souha S. Kanj

Migration and health

Migration and health

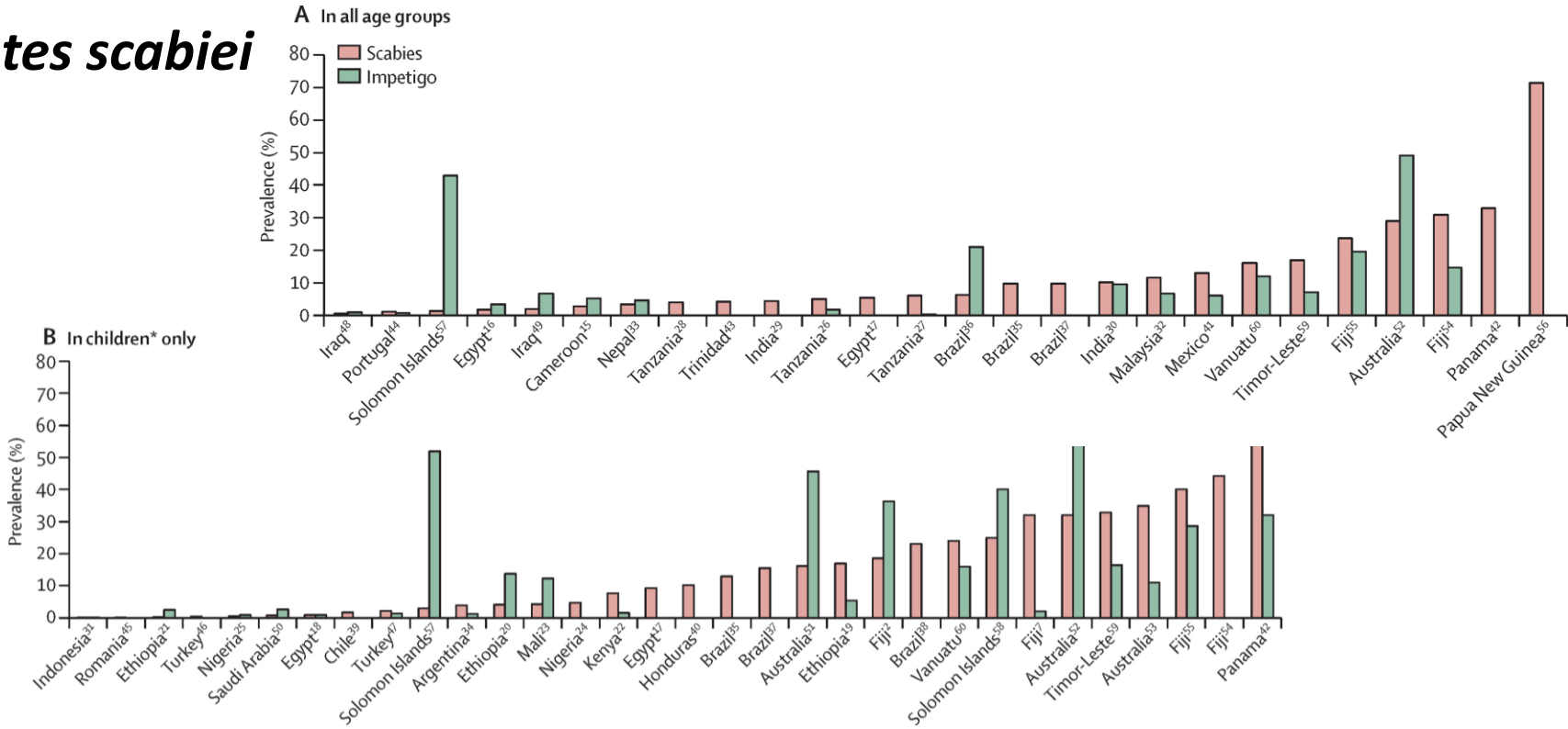
Sarcoptes scabiei

Scabies amongst asylum seekers: prevalence and effect of the scabies hygiene programme. Beeres et al., 2016

- high prevalence in home countries, poor hygiene and immune status during travel
- regional public health services and primary healthcare centre at the national reception centre for asylum seekers, started a hygiene prevention programme including showering, washing of clothes and preventive treatment with ivermectin for all refugees from high-burden countries
- in 2015, 1973 screenings: 608 (30%) participants (mostly Ethiopia, Eritrea and Somalia) had clinical signs of scabies during this screening

Migration and health

Sarcoptes scabiei



Lancet Infect Dis. 2015 Aug;

Prevalence of scabies and impetigo worldwide: a systematic review.

Romani L1, Steer AC2, Whitfeld MJ3, Kaldor JM4.

Migration and health

Migration and health

Refugee crisis and re-emergence of forgotten infections in Europe

Cutler SJ., Clin Microbiol Infect 2016; 22: 8–9

Louse-borne relapsing fever
Borrelia recurrentis

- an acute febrile infection
- 1-3 fairly regular waves of bacteremia
- caused by *Borrelia recurrentis* transmitted by the human body louse (*Pediculus humanus humanus*)
- highest number of cases observed in Ethiopia, 7th most common cause of hospital admission and 5th most common cause of death
- endemic in East Africa (e.g., Ethiopia, Eritrea, Somalia, and Sudan)

Migration and health

Louse-borne relapsing fever

Borrelia recurrentis

A sepsis-like picture associated with thrombocytopenia should raise the clinical suspicion of this disease.

High bacterial load observed during febrile episodes makes the diagnosis straightforward when blood smears are examined, but the diagnosis may be missed by unskilled observers or when blood is collected after antibiotic treatment.

Louse-borne relapsing fever is increasingly observed among asylum seekers from the Horn of Africa arriving in Europe after prolonged stay in refugee camps in Libya.

A Jarisch-Herxheimer reaction might be precipitated by antibiotic treatment.

Without treatment: mortality 20-70%.

Migration and health

Louse-borne relapsing fever
Borrelia recurrentis

31 published cases till 2015

Country	Cases	Presenting signs/ Therapeutic support	Reference
Germany	1	Fever; cough; haemoptysis	[9]
Germany	1	ICU treatment; intubation; vasopressor support	[10]
Germany	21	Fever; various accompanying signs	[5]; Volker Fingerle Personal communication; ProMed reports 20150903.3620174 & 20150911.3638819
Finland	2	Fever; thrombopenia; (1 anaemia; 1 leukopenia)	Seppo Meri Personal communication
Netherlands	2	Fever; headache; dizziness; myalgia; JHR ICU fluid resuscitation & cardiac support.	[3]
Sicily	3	Fever; headache; thrombocytopenia; artromyalgia (2); JHR (1).	[6]
Switzerland	1	Fever; nausea; headache; dysuria; bilateral flank pain.	[4]
Total	31		

Migration and health

Forgotten infections…

- 18yo male from Eritrea
- Hospitalized for painful ulcers on both legs and feet

- Came to CH via Sudan, Libya, Italy
- Lives in a room with 10 other males

Migration and health

Forgotten infections…

A BERIH. Cutaneous Corynebacterium diphtheriae: A traveller's disease? Can J Infect Dis 1995;6(3):150-152.

- Microbiology revealed:

– Corynebacterium diphtheriae
  – Strept. pyogenes
  – S. aureus MRSA

Migration and health

Infections

endemic	Malaria, HIV, Tb, leishmaniasis, bilharzia, relapsing fever (spirillium fever)
preventable	Measles, polio, diphtheria, varicella
Induced by the journey	Overcrowded refugee camps, poor hygiene, e.g.scabies, diphtheria, diarrhea, louse recurrent fever, meningococcal meningitis, multiresistant germs

Migration and health

MRSA and ESBL

prevalence of MRSA and ESBL-producing bacteria within 4 Swiss refugee centers

- MRSA was detected using pharyngeal, nasal and inguinal swabs,
- 261 refugees screened: 16.1% MRSA
- 10x higher rate of MRSA in refugees

- ESBL-producing bacteria were identified using standard rectal swab and urine testing procedures
- 261 refugees screened: 23.7% ESBL-producing bacteria
- 5x higher rate of ESBL in refugees

Clinical cases

Case 1

General	• 59yrs old male patient, Afroamerican pigmentation pattern
Somatic	• Cor: global heart failure, AF, PM in situ • Pneu: crackles both sides • A: quiet bowel sounds, slightly distended, no resistance • Ren: kidney failure • septic shock • GCS 6
Travel	• Italy • Substance, FA, Vaccinations, Allergies ?
MH	•implantation of PM 2weeks ago in Napoli
Social	• citizen of Guinea (?), resident of UK (?)

Case 1

Lab values

CRP 380, PCT 80, Krea 400, Lactate 9, BNP 3000 …

ICU,

Intubation,

Isolation

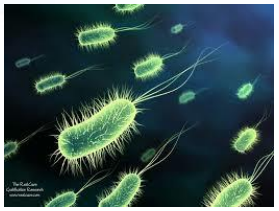
Case 1

Diagnostic steps

Cardiology	Rheumatology	Neurology	Pneumology
Endocarditis? Valvulopathies? LV/RV malfuncion? TTE TEE ECG	Autoimmune disease? ANAs, ANCAs, RF, anti-GBM, immunoglobulines, CCP	Epilepsy? EEG Encephalopathy? MRI PNS? LP	TBC? Bronchoscopy Pneumonia? BAL with bacterial, viral and fungal analysis

Case 1

Diagnostic steps - infectiology



Bacteriology	Virology	Fungi
Brucellosis, Bortella, Listeria, Pneumococci, Legionellas, Neisseria, Leishmaniasis. Chlamydia, Mycoplasma **TBC spot**	**HSV, EBV, Influenza, RSV, CMV, Rhinovirus, hMPV, PIV, adenovirus, Polio, Hep, HIV**	**TBC?** **Bronchoscopy** **Pneumonia?** **BAL with bacterial, viral and fungal analysis**

Plus…
CT Thorax
LP for TBC, bacteria, viruses

Case 1

Treatment

Bacteriology	Virology/Fungi	others
<u>Amoxicillin</u> **Clarithromycin** **Meronem** **<u>Tazobactam</u>** **Clarithromycin**	**<u>Acyclovir</u>** **<u>Fluconazole</u>**	**Prednison** **Heparin** **Propofol/Fentanyl** **Cordarone** **Levosimendan** • **Haemofilter!** • **1:1 nurse care** • **Delirium prophylaxis and therapy** • **Physiotherapy**

Plus…
Social services
Total duration: 55 days at ICU

Case 1

What was missing to avoid overdiagnosis/overtreatment or underdiagnosis/undertreatment?

1. Anamnesis!
- country of origin?
- Travel history
- Animals?
- Medical history inc. meds?
- Recent complaints?
- Family history?
- Environmental history (work)?
- Social history?
- Alcohol? Nicotine? Drugs?

2. insurance?

3. patient's wish?

Case 1

Outcome

Costs: approx. 1 Mio. CHF

DD: Septic shock with abdominal focus

Exitus letalis in CT scan of the abdomen

Case 2

35yrs old male patient, refugee from Syria

Presentation: lower left back pain, fatigue

Anamnesis: renal cell cancer, resected in Syria,
pt. under peroral chemotherapy

Social: lives with wife and 2 children in provided asylum.

Case 2

PE

L: ok
A: ok
H: ok
N: ok
U: renal cell cancer progressive disease

Oncology department (outpatient),

Professional translator

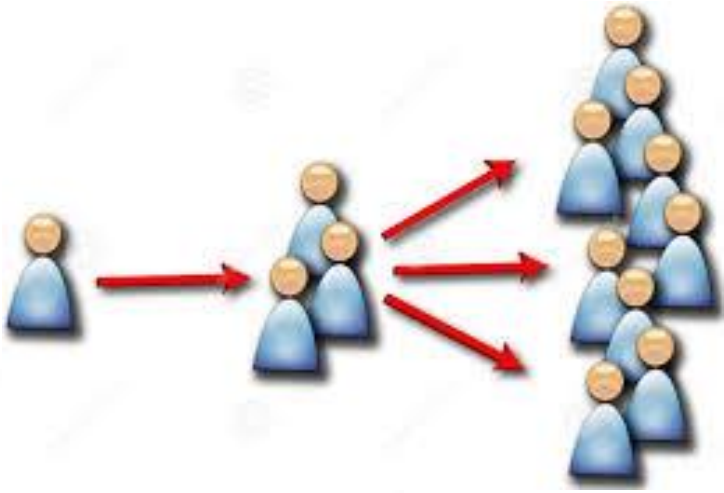
Case 2

After the first visit

initially	After a week	After several weeks	After several months

Case 2

After the first visit



Case 2

What was missing to avoid overdiagnosis/overtreatment or underdiagnosis/undertreatment?

Anamnesis!

- What are the current conditions of the patient?
- Does he understand how to take medicine? Is he incompliant?
- Why did he flee his country?
- What was his profession?
- What are his fears concerning his prognosis?
- Why is he repetitively returning to the hospital?

Summary


LOST
CONFUSED
UNSURE
UNCLEAR
PERPLEXED
DISORIENTED
BEWILDERED

CULTURAL BARRIERS

SOCIAL ISSUES

LANGUAGE BARRIERS

LEGAL ISSUES

SPOUSAL AND CHILD ABUSE

PREVENTIVE HEALTH AND SAFETY ISSUES

INFECTIOUS AND ENDEMIC DISEASES

Refugees expectations for treatment and compliance

- Refugees often expect Western physicians to cure everything immediately.
- Illness is an unavoidable part of life, and they may delay seeing a physician.
- Urgency with regard to getting prescriptions filled, such as antibiotics, may not seem important to some, while others require the maximum level of diagnosis and treatment, even if not needed.
- Beliefs and expectations of the healing roles of witch doctors and priests from homelands.
- Cultural beliefs regarding the etiology of illness (e.g. weakening of nerves, an imbalance, an obstruction of chi, failure to be in harmony with nature)
- Distrust of and unfamiliarity with Western medicine

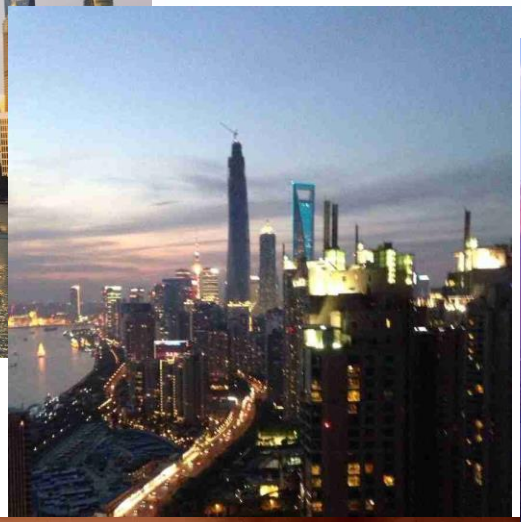
Refugees expectations for treatment and compliance

- ✓ Supervised administration of some medicine (i.e., tuberculosis prophylaxis)
- ✓ When prescribing an antibiotic, tell to finish the medicine, especially since the usual custom is to take medicine only until the pain or symptom is gone.
- ✓ It may be preferable to prescribe as few medicines as possible at a single visit, with extra time given to help the patient understand the treatment protocol.
- ✓ Address the beliefs system and try to ask the patient whether and how his/her expectation is?

Clinical red flags

Vit D deficiency	Rickets, bone pain, muscle pain, late fontanelle closure (low dairy)
TB (active vs latent)	Prolonged cough, fever, night sweats, poor growth
Anaemia	Irritability, lethargy, developmental delay (high dairy)
Gastrointestinal infections	Diarrhoea, abdominal pain, epigastric pain, vomiting, poor appetite, poor growth
Heavy metal toxicity	Traditional medicines, developmental delay, gastrointestinal upset
Mental Health Concerns	Behavioural disturbance: sleep, eating, play, somatisation

Thank you



Thank you