Screening and healthcare organization in refugee camp settings – lessons for the future

SOTIRIOS TSIODRAS, (Athens, Greece)
Europe-Mediterranean 2017

Sea arrivals
43,807
Last updated 21 Apr 2017

2016 sea arrivals
355,728
Last updated 31 Mar 2017

Dead and missing (estimate)
973
Last updated 20 Apr 2017

Mediterranean Situation
Greece 2017 - coming from the sea
Greece -> then to mainland
Greece, hosting sites - April 2017

- >62,000 stranded in country
- Approx 14,000 in alternative accommodations
- >9,000 outside accommodation facilities
Greece 2017 -
most common nationalities

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syrian Arab Rep.</td>
<td>44.0%</td>
</tr>
<tr>
<td>Others</td>
<td>38.1%</td>
</tr>
<tr>
<td>Iraq</td>
<td>10.7%</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>3.7%</td>
</tr>
<tr>
<td>Iran (Islamic Rep. of)</td>
<td>2.3%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1.2%</td>
</tr>
</tbody>
</table>
Greece - 2017

Age and Gender (March 2017)

- Children: 483
- Women: 360
- Men: 683

Source: Hellenic Police.
Unaccompanied children, Greece

**Key Facts**

- **2,000** Estimated number of UAC currently in Greece based on analysis from referrals to EKKA (as of 17 March 2017)

- **1,352** Total number of places available in UAC shelters (filled, pending assigned cases as of 17 March, including 90 vacant places in the process to be filled)

- **891** Total number of UAC on waiting list for shelter (as of 17 March) including:

### Situation Update:

**Unaccompanied Children (UAC) in Greece**

17 March 2017

**Number of places available in UAC shelters (filled, pending assigned cases) vs. Numbers of additional requests for placement on waiting list**

25 July 2016 - 17 March 2017

![Graph showing availability of places and requests for placement on waiting list]

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Unaccompanied children, Greece

UAC referrals to EKKA by nationality
1 January - 28 February 2017

- Pakistan: 44%
- Afghanistan: 20%
- Syria: 13%
- Algeria: 4%
- Iraq: 3%
- Bangladesh: 3%
- Other: 13%
Emergency relocation mechanism

<table>
<thead>
<tr>
<th>Relocated persons</th>
<th>Remaining places from allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Member States</td>
<td>EFTA Member States</td>
</tr>
</tbody>
</table>

13,596 Total persons

- 9,632 Relocated from Greece (14% of 66,400)
- 3,964 Relocated from Italy (9% of 39,600)
Greece 2017 – Health provision for refugees / migrants

• National legislation - 2016

• Coordinating body
  – National Command Center (EKEPY)
Greece 2017 – Health provision for refugees / migrants

- Direct NHS access for vulnerable migrants/refugees
- All regardless of ethnicity/legal status accepted within NHS 1ry health care structures, hospital ERs
- All entitled to free healthcare services in 2ry NHS health structures regardless of legal status
Greece 2017 - Profile of a site

HEALTH structure

• Primary care in hosting area
  – National & International NGOs
  – Army, HCDCP, local 1ry care centers
Greece 2017 - Profile of a site

- Demographics
- Energy – safety
- Shelter e.g. PoCs, RHUs
- Protection e.g. SGBV
- WASH
- NFI
- Communication
- Food
- Education
- Health
Greece 2017 - Profile of a site

**HEALTH**

**Health:**

- Distance to the Nearest Health Facility: Less than 10km
- Primary Health Care: Partially
- Referral System: Occasionally
- MHPSS Programmes: Partially
- Access Health Services in the Main Languages Spoken: Regularly for main languages used on site
<table>
<thead>
<tr>
<th></th>
<th>Overall N</th>
<th>Syrian N (%)</th>
<th>non-Syrian N (%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>880</td>
<td>(100)</td>
<td>222 (25.2)</td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>625</td>
<td>(71.0)</td>
<td>156 (70.0)</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>(29.0)</td>
<td>66 (30.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>189 (28.9)</td>
<td></td>
</tr>
<tr>
<td><strong>Age (median, range, 95% CI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>34 (16–84)</td>
<td>33 (12.64, 31.7–35.8)</td>
<td>37 (11.59, 35.9–37.7)</td>
<td>0.0001</td>
</tr>
<tr>
<td><strong>Country of Origin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>50</td>
<td>(5.7)</td>
<td>9 (3.1)</td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>206</td>
<td>(23.5)</td>
<td>32 (14.4)</td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>14</td>
<td>(1.6)</td>
<td>3 (1.3)</td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>69</td>
<td>(7.8)</td>
<td>19 (8.5)</td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>292</td>
<td>(33.2)</td>
<td>62 (27.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Reason for ED Presentation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>medical</td>
<td>381</td>
<td>(43.3)</td>
<td>73 (32.8)</td>
<td>0.28</td>
</tr>
<tr>
<td>surgical</td>
<td>137</td>
<td>(15.6)</td>
<td>35 (15.7)</td>
<td></td>
</tr>
<tr>
<td>psychiatric</td>
<td>41</td>
<td>(4.6)</td>
<td>8 (3.6)</td>
<td></td>
</tr>
<tr>
<td>other (ENT, gynaecological, dermatological)</td>
<td>41</td>
<td>(4.6)</td>
<td>8 (3.6)</td>
<td></td>
</tr>
<tr>
<td>Mean count of Comorbidities (SD)</td>
<td>1.07 (1.91, 0–9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Count of Patients with Comorbidities</td>
<td>(36.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type of Comorbidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chronic medical condition of unclear significance</td>
<td>89</td>
<td>(10.2)</td>
<td>25 (11.2)</td>
<td>0.37</td>
</tr>
<tr>
<td>psychiatric</td>
<td>211</td>
<td>(24.0)</td>
<td>45 (20.2)</td>
<td></td>
</tr>
<tr>
<td>infectious</td>
<td>22</td>
<td>(2.5)</td>
<td>9 (4.1)</td>
<td></td>
</tr>
<tr>
<td>Charlson Co-Morbidity Index (Mean, 95% CI)</td>
<td>0.18 (0.68)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisation rate</td>
<td>19 (8.6)</td>
<td>55 (8.4)</td>
<td></td>
<td>0.69</td>
</tr>
<tr>
<td>Readmission to ED during study period</td>
<td>119 (53.6)</td>
<td>354 (53.7)</td>
<td></td>
<td>0.92</td>
</tr>
</tbody>
</table>

**Most common c/c -> ER**

- Medical: 36.5%
- Surgical: 43.3%
- Psychiatric: 15.6%

Disabilities and injuries

Mental health problems

Pregnancy related issues

Infectious diseases

Gastrointestinal problems and dehydration

Dental problems

Chronic diseases
Challenges in HC at facilities

- **Coordination** in order to ensure
  - Continuity of health care provision
  - Resource sustainability
- **Human**
- **Financial issues, fund raising**
Challenges (cont.)

• Common SOPs for all provides
  – For individual case management
  – Transportation to / from tertiary care
  – Health Insurance number in undocumented M/R
  – Communication issues – local w tertiary care team
  – F/u care after acute care
Challenges (cont.)

• Presence of *inter-cultural mediators*
  – Necessary in all aspects of care provision
  – Cultural differences
    • Ramadan, death/disease perception, women’s health
  – Not available at all tertiary care level facilities
Screening challenges

• Legislation asks specific screening for those M/R seeking legal status
  – Tbc, malaria, HIV/STDs, hepatitis A/B/C, stool parasites
    • For all others very difficult to perform
    • Infx/dz issues handled on a case to case basis

• No universal screening at the moment

• Emphasis on
  – 1ry health care services
  – Epidemiological surveillance
Epidemiological surveillance

- **HCDCP – Reinforcement of existing system**
  - Mandatory notification, Laboratory surveillance
  - HIV/HCV early dx, intervention & care

- **Syndromic surveillance -> 14 syndromes w PH significance**
  - since May 2016
Syndromic surveillance Aim

• Prompt recognition of:
  • clusters of communicable diseases
    • Aim -> take prompt response and control measures.

• Examples
  • foodborne/waterborne diseases, VPDs
Syndromic surveillance, Greece 2016-17

<table>
<thead>
<tr>
<th>Site-Clinic:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization(s):</td>
<td>Clinic hours (from-to):</td>
</tr>
<tr>
<td>Name of health professional:</td>
<td></td>
</tr>
</tbody>
</table>

> Please CALL IMMEDIATELY KEELPNO (210 5212 054) in case of clinical suspicion of “immediately notifiable diseases” (see Instructions) or in case of cluster of cases with unusual or severe manifestations.

**SYNDROMES OR CONDITIONS UNDER SURVEILLANCE ([1] to [14]):**

<table>
<thead>
<tr>
<th>Table (A)</th>
<th>0–4 yrs</th>
<th>No.</th>
<th>5–17 yrs</th>
<th>No.</th>
<th>18+ yrs</th>
<th>No.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory infection WITH fever</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[2]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastroenteritis without blood in the stool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[3]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bloody diarrhoea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[4]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rash WITH fever</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspected scabies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Syndromic surveillance Aim

• Prompt recognition of:
  • individual cases of Infx/Dz w epidemic potential
  • cases/clusters considered PHEIC, cross border threats
    • Aim -> investigation, contact tracing & control measures.

• Examples
  • Meningococcal meningitis, Hep A, VPDs
  • Polio, hemorrhagic fever, cholera, Tbc
### Syndromic surveillance, Table B

<table>
<thead>
<tr>
<th>Table (B)</th>
<th>No.</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[8] Suspected diphtheria, respiratory or cutaneous</td>
<td></td>
<td>[12] Haemorrhagic manifestations WITH fever</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[14] Death of unknown aetiology</td>
</tr>
</tbody>
</table>

**Note:** Table (A): the cell corresponding to syndrome and age group can be used to mark cases (e.g. MHI), in order to facilitate counting. Tables (A) and (B): in cell “No,” the total number of cases (e.g. 6) is included. If there are no cases write “0” in the cell (zero reporting).

- Syndromes involving severe diseases with particular significance for public health services; possible “cross-border health threats”
- Very small numbers predicted
- Zero reporting required

- **Table C, individual data for B cases, MMR, Chickenpox**
The most common syndromes

![Bar graph showing relative frequency of reported syndrome cases, all camps, 16/5/2016-09/01/2017.

- Respiratory infection with fever: 55 cases
- Gastroenteritis without blood in the stool: 26 cases
- Suspected scabies: 11 cases
- Rash with fever: 7 cases]
Analysis, Scabies example

5. Suspected scabies
Graph 5: Proportional morbidity of Suspected scabies, based on reports from all camps in Greece.

Point of care surveillance in refugee/migrant reception centres, Greece

Suspected scabies

- Observed proportional morbidity
- Expected proportional morbidity
- Warning level (97.5% prediction interval)

Date
12 Sep, 19 Sep, 26 Sep, 03 Oct, 10 Oct, 17 Oct

Proportion of clinic visits (%)
0, 1, 2, 3, 4
Syndromic surveillance - Response

- Daily review/evaluation of produced signals
  - public health relevance, qualitative criteria
  - Decision making on need for further investigation

  - Investigation of selected signals
    - contacting the frontline HC workers

- Public health action as necessary
No serious PH threat so far

• Outbreaks of
  • Gastroenteritis (short duration, low severity)
  • Scabies
  • Acute jaundice -> Hepatitis A -> 85% < 15 yrs old
  • Rash w fever -> chickenpox – almost all < 15 yrs old
• < 1% of reports -> Tbc cases -> isolated/individual events
Syndromic surveillance - Challenges

• Coordination of data collection
  – Comprehensive system
    • large n of surveillance points – need to monitor all, also w zero reporting
    – Multiplicity & variability of data sources in camps

• Timeliness, Automatization

• Interpretation e.g. other indices, signal verification

• Response -> collaboration w PH authorities locally
Syndromic surveillance - Challenges

- Ad hoc surveillance system, but not temporary
- Enhanced passive character: labor-intensive
Mandatory notification system
Malaria, refugees 2016

• 18 imported cases in camps
  – 77% PK, 11% AF
  – 89% *P. vivax*

• 3 cases in other accommodation facilities
  – 100% *P. vivax*
Mandatory notification system
GI outbreaks!!!

• FWD Greece 2015:
  – 15 *Shigella* cases Eleonas 20/08 - 7/10/15

T. Georgakopoulou and others
Hepatitis A among refugees, asylum seekers and migrants living in hosting facilities, Greece, April to December 2016

K Mellou 1, A Chrisostomou 1, T Sideroglou 1, T Georgakopoulou 1, M Kyritsi 2, C Hadjichristodoulou 2, S Tsiodras 1

Cases of hepatitis A among refugees by week of symptom onset, Greece, April–December, 2016 (n=177)

- Camp A (25 cases)
- Camp B (51 cases)
- Camp C (8 cases)
- Camp D (33 cases)
- Camp E (10 cases)
- Hosting facilities with 2–7 cases each (n=38)
- Hosting facilities with only 1 case (n=12)

Hepatitis A among refugees, asylum seekers and migrants living in hosting facilities, Greece, April to December 2016

K Mellou ¹, A Chrisostomou ¹, T Sideroglou ¹, T Georgakopoulou ¹, M Kyritsi ², C Hadjichristodoulou ², S Tsiodras ³³

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Country of origin</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Syria n (rate per 1,000)²</td>
<td>Afghanistan n (rate per 1,000)²</td>
<td>Iraq n (rate per 1,000)²</td>
<td></td>
</tr>
<tr>
<td>0–4</td>
<td>43 (8.8)</td>
<td>4 (2.1)</td>
<td>2 (1.8)</td>
<td></td>
</tr>
<tr>
<td>5–9</td>
<td>55 (11.9)</td>
<td>1 (0.5)</td>
<td>3 (2.5)</td>
<td></td>
</tr>
<tr>
<td>10–14</td>
<td>32 (9.5)</td>
<td>2 (1.2)</td>
<td>4 (4.2)</td>
<td></td>
</tr>
<tr>
<td>15–29</td>
<td>22 (2.2)</td>
<td>1 (0.1)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>152 (5.0)</td>
<td>8 (0.5)</td>
<td>9 (1.2)</td>
<td></td>
</tr>
</tbody>
</table>

© by author

Living conditions
Idomeni -> NO more!
Hepatitis A - Idomeni
Mandatory notification system
Varicella cases, May - October 2016
Refugee Immunizations, Greece

- National campaign for refugees
  - 10 childhood dz --> MMR, Polio, DTP, PCV, HiB, HepB
  - In children 6 months – 15 yrs
  - > 30,000 shots administered
  - will continue within 1ry Health care context
  - Challenges w IPV vaccination procurement

T. Panagiotopoulos, A. Terzidis, Y Baskozos, MoH data
Refugee Immunizations, Greece

- Vaccine coverage 1\textsuperscript{st} dose
  - MMR 83%
  - DTP-Polio 82%
  - PCV 76%
  - HiB 75%
  - HepB 79%

T. Panagiotopoulos, A. Terzidis, Y Baskozos, MoH data
AMIF project: Comprehensive Emergency Health Response to Refugees Crisis
AMIF project – Comprehensive Emergency Health Response to Refugees Crisis

• Main targets:
  – Strengthen detection & response capacity
    • Provision of on-site healthcare & psychosocial services
      – POC testing, reference lab diagnostic capacity
      – Capacity to conduct mass vaccination
      – Malaria & Tb screening
    • Mobile Medical Units – MUTs, at least 1 in each region
      – Acute medicine, PH response
  – Support/evaluate/improve surveillance system
### AMIF project – Comprehensive Emergency Health Response to Refugees Crisis

<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress made</th>
<th>Database ready</th>
<th>Analysis Report Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording of medical services offered</td>
<td>Completed at 4 camps</td>
<td>4 camps</td>
<td>NA</td>
</tr>
<tr>
<td>Retrospective recording of malaria RTDs use</td>
<td>Completed at 4 camps</td>
<td>4 camps</td>
<td>NA</td>
</tr>
<tr>
<td>Training on malaria RTDs use / recording</td>
<td>Completed at 4 camps</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Evaluation of medical services inside the camps</td>
<td>Completed at 3 camps</td>
<td>NA</td>
<td>Planned</td>
</tr>
<tr>
<td>Risk assessment – Vectorborne Diseases</td>
<td>Completed at 2 camps</td>
<td>Preparation ongoing</td>
<td>Planned</td>
</tr>
</tbody>
</table>
AMIF project – Comprehensive Emergency Health Response to Refugees Crisis

<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress made</th>
<th>Database ready</th>
<th>Analysis Report Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrospective recording of referrals to hospitals</td>
<td>Completed at 4 camps</td>
<td>Preparation ongoing</td>
<td>Planned</td>
</tr>
<tr>
<td>Organize recording of referrals</td>
<td>Completed at 4 camps</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Evaluation of syndromic surveillance</td>
<td>Protocol prepared</td>
<td>Planned</td>
<td>Planned</td>
</tr>
<tr>
<td>Assessment of camps - Indicators</td>
<td>Completed at 4 camps</td>
<td>Planned</td>
<td>Planned</td>
</tr>
<tr>
<td>Recording of vaccinations / vaccination coverage</td>
<td>Completed at 2 camps</td>
<td>4 camps</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Migrant populations entering the EU/EEA, and particularly children, are at risk of developing infectious diseases in the same way as other EU populations, and in some cases may be more vulnerable.
ECDC threat assessment:

- Newly arrived migrants and refugees do not represent a threat to Europe with respect to communicable diseases.
- The risk to refugees has increased due to overcrowding at reception facilities—poor hygiene & sanitation.

Teymur Noori, ECDC
Conclusions - Greece data

• various challenges in Health structure, screening
  – Opportunity for dialogue, improvement of health policies
  – NGOs/International assistance of paramount importance
  – Harmonization of screening necessary across Europe

• **Syndromic surveillance** assisted in informing PH action

• Evaluation of actions, new actions ongoing w EU support
Conclusions – Refugee settings

• Need to strengthen
  – Health systems’ capacity & emergency preparedness
  – Surveillance & response / screening for Infx Diseases
  – Screening at point of entry is not enough! -> Promote access to comprehensive continuous Health care w targeted prevention services
  – Continue support to first arrival European countries
Knowledge hub-Migration Health

- Migration & Health multi-stakeholder sharing platform
- Scientific & Capacity Building forum
- Knowledge management project launched in 2017, WHO Euro

S. Severoni, WHO Europe Athens, 28 March 2017
Persecution, conflict and poverty forced over 1 million people to flee to Europe in 2015. Many came seeking safety for themselves and their families, risking their lives and facing a treacherous journey.

Half of those crossing the Mediterranean in 2015 were Syrians escaping the war at home.

41,713 have risked their lives to reach Europe by sea so far in 2017

938 feared drowned so far in 2017

More statistics
Updated 18 April 2017

Donate Now

Greece: Smiles return at safe haven
2500 Refugee and Migrant Children Now Attending Greek Schools
Collaborating partners

- Ministry of Health, Y Baskozos
- EKEPY, Dr Papaefstathiou
- Prefectures PH Directorates
- Ministry of Migration Policy, C Botsi, K Kampourakis
- Ministry of Defense
- NSPH, Dr Vatopoulos, T. Panagiotopoulos
- NGOs in the camps, HRC, MSF, MdM, Praksis, Solidarity now, Athens Solidarity Center, Medin, Unicef, Save the children, & many others
- UNHCR, IOM

- HCDCP, KEELPNO team
- Dpt of Epi surveillance
- EurHuman, C. Lionis & team
- ECDC, Teymur Noori & team
- Institut de Veille Sanitaire, France
- Norwegian Public Health Institute
- ISS, Italy