

# ATES – Technical Assistance to the Local Health Authority of Siracusa

## TOR for the software development of an “ePHR Lite” for the Sicily region

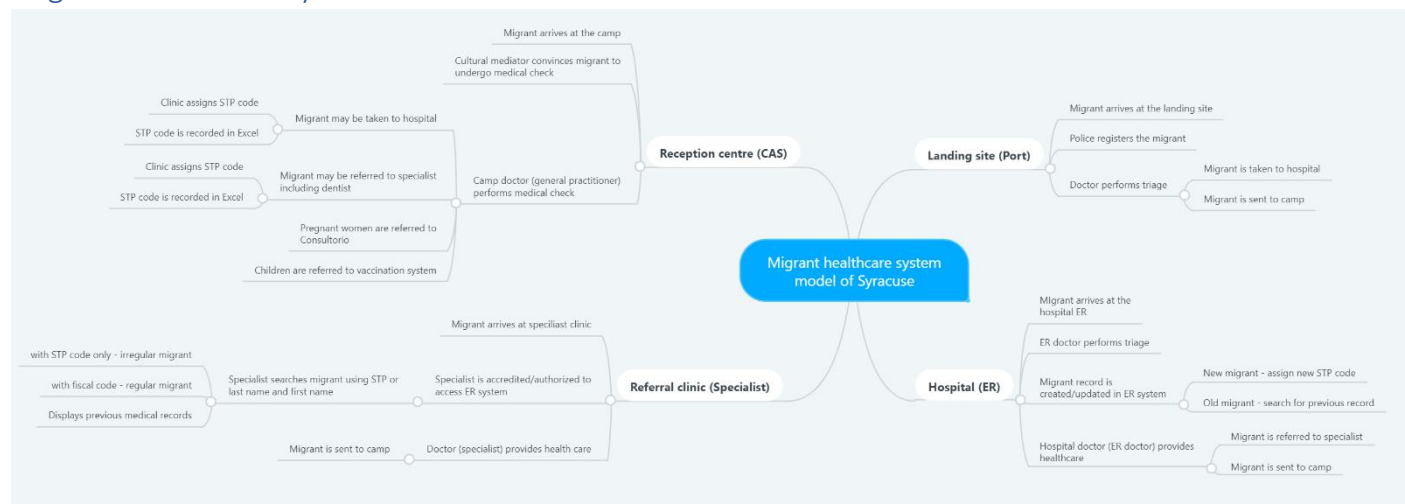
### Background

The general objective of the technical assistance project is to strengthen the governance model of health care in the territory of the for *Azienda Sanitaria Provinciale* (hereinafter ‘ASP’) of Siracusa and other regional reception centres, through the use of innovative and technological solutions, such as the Re-Health ePHR (electronic personal health record) successfully piloted in the Siracusa region in 2017.

### Current setting

- a. ASP of Siracusa does not have an electronic system to capture migrant health data;
- b. Migrant healthcare providers including doctors at the landing sites, reception centres, hospital emergency room and specialists often do not have access to medical history or documentation of previous healthcare received by migrants to ensure continuity of care
- c. ASP of Siracusa does not have real-time access to migrant health information including number of migrants at the reception centres, number of migrants referred to hospital and specialists, reasons for referral, health status and medical conditions of migrants at the reception centres

### Migrant healthcare system of Siracusa



#### Landing site (Port)

1. Migrant arrives at the port (pre-identification phase)
2. Police registers migrant (pre-registration, identity not confirmed until they become regular migrants or assigned a legal status)
3. Migrant undergoes initial medical check (triage) at the port
  - 3a. Migrants with serious medical condition including pregnancy (1% of landings) are given a referral slip (white paper) and taken to the hospital → (4)
  - 3b. Migrants without serious medical condition are sent to the camps → (11)

#### Hospital Umberto I (Emergency room)

4. Migrant arrives at the hospital ER
5. Hospital Umberto I assigns STP (*Straniero Temporaneamente Presente*, Temporarily Present Foreigner) code
6. Migrant record is created in the Health Portal of the Hospital Umberto I
7. Hospital doctor (general practitioner) and nurses perform medical examination
8. Hospital doctor records medical information in the portal
  - 8a. Migrant is sent to camp. They are given a discharge paper saying fit to go out and including all medical information → (11)
  - 8b. Migrant is referred to specialist with red paper →(16)

#### Camp (CAS)

9. Migrant arrives at the camp
10. Cultural mediator helps communicate to the migrant that:
  - 11a. a medical check-up service is available at the camp even if they are not feeling sick
  - 11b. they can have free access to regular Italian healthcare system if they have STP code
11. Camp doctor (family doctor) performs medical check at the clinic
  - 12a. Migrant may be referred to hospital (Approximately 20 cases per year) → (9)
  - 12b. Migrant may be referred to specialist (including dentist) with red paper → (16)
  - 12c. Pregnant women are referred to Consultorio
  - 12d. Children are referred to vaccination system
12. STP code is assigned (7 digits) and handwritten on the pre-printed form by ASP of Siracusa
13. Assigned STP codes is recorded in an Excel sheet and transferred to ASP Siracusa by CAS staff

#### Referral clinic

14. Migrant arrives at referral clinic
15. Doctor enters first name, last name in the health portal
16. System detects if migrant has STP code only (irregular migrant) or also fiscal code (regular migrant)
17. System displays medical history of migrant
18. Specialist provides the healthcare service and records medical information in the health portal
19. Migrant is sent to camp → (11)



## Reception Centre (CAS) Observations

The team visited two reception centres as part of the IT needs assessment. Representatives from ASP including Ms. Lavinia Lo Curzio, Dr. Daniela Tirri and Dr. Giuseppe Nipitella also joined the visits.

### 1. CAS Zagara caters to families and accommodates 114 migrants.

Health services	Health records at the clinic	IT facilities
<p>a. Doctor who is a Pediatric Dermatologist visits twice a week.</p> <p>b. Migrants go to the medical room for consultation or treatment on a voluntary basis.</p> <p>c. Cultural mediators help convince migrants to see the doctor.</p> <p>d. Cultural mediators are also assigned to assist doctors based on language spoken. There is no nurse.</p> <p>e. Basic drugs and other medical supplies are available inside the medical consultation room.</p> <p>f. Doctor brings own blood pressure apparatus.</p> <p>g. Migrants are given the same kind of healthcare available to Italian nationals.</p> <p>h. Diagnostic tests performed:</p> <ul style="list-style-type: none"> <li>• Malaria rapid test</li> <li>• Pregnancy test upon request of the migrant</li> <li>• HIV test for migrants with history of abuse</li> </ul> <p>i. Migrants are referred to ASP hospital or other specialist clinics as</p>	<p>a. Masterlist of migrants printed on a sheet of paper with information as follows:</p> <ul style="list-style-type: none"> <li>• Centre ID number</li> <li>• First name</li> <li>• Last name</li> <li>• Country of birth</li> <li>• Date of birth</li> <li>• Date of landing</li> <li>• Status of legal procedure</li> <li>• Police ID</li> </ul> <p>b. Medical consultation logbook</p> <ul style="list-style-type: none"> <li>• Name</li> <li>• Nationality</li> <li>• Date of visit</li> <li>• Time of visit</li> <li>• Symptom or complaint</li> <li>• Treatment given</li> <li>• Type of intervention</li> <li>• Doctor</li> </ul> <p>c. Medical files are kept in a folder for every migrant seen in the medical room. This folder may contain:</p> <ul style="list-style-type: none"> <li>• Laboratory results</li> <li>• Vaccination record</li> <li>• Red slip which is also the specialist referral form</li> <li>• Any attachment containing detailed medical notes</li> </ul> <p>d. Doctor prepares an Excel sheet once a month with list of billable services and</p>	<p>a. No computer in the medical room</p> <p>b. Wi-Fi connection available (13/7 mb download/upload)</p>

<p>needed. An appointment is arranged and a reception centre staff accompanies the migrant to the hospital or clinic.</p> <p>j. Other notes:</p> <ul style="list-style-type: none"> <li>• No migrant has refused to do HIV test.</li> <li>• Mantoux test, TB smear or culture are not performed.</li> <li>• There had been special projects related to mental health (such as the Silver Project).</li> <li>• It is possible for a migrant to transfer from one primary reception centre to another.</li> </ul>	<p>submits it to ASP. This system started in 2014.</p> <p>e. Other notes:</p> <ul style="list-style-type: none"> <li>• Only one migrant was able to present a previous vaccination record</li> <li>• Local Health Office has the list of migrants with mental health conditions</li> <li>• There is a information sheet for every migrant which is kept the administrative office and which contains information about vulnerabilities, allergies and some medical history.</li> </ul>	
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2. CAS Mater Dei accommodates 45 migrants and caters to single women as well as families.

Health services	Health records at the clinic	IT facilities
<p>a. Doctor visits twice a week.</p> <p>b. Migrants go to the medical room for consultation or treatment on a voluntary basis.</p> <p>c. Cultural mediators help convince migrants to see the doctor.</p> <p>d. Cultural mediators are also assigned to assist doctors based on language spoken. There is no nurse.</p> <p>e. Basic drugs and other medical supplies are available inside the medical consultation room.</p>	<p>a. Masterlist of migrants printed on a sheet of paper with information as follows:</p> <ul style="list-style-type: none"> <li>• Serial number</li> <li>• Name</li> <li>• Date of birth</li> <li>• Minor status</li> <li>• Nationality</li> <li>• Sex</li> <li>• Family members</li> <li>• Date of landing</li> <li>• Boat number</li> <li>• Family doctor</li> <li>• STP code</li> <li>• STP expiration</li> </ul> <p>b. A medical consultation logbook is available like in the other reception centre. The team noted</p>	<p>a. No computer in the medical room</p> <p>b. Wi-Fi connection available (4/0.5 mb download/upload)</p>

<p>f. Doctor brings own blood pressure apparatus.</p> <p>g. Migrants are given the same kind of healthcare available to Italian nationals.</p> <p>h. Diagnostic tests performed:</p> <ul style="list-style-type: none"> <li>• Malaria rapid test</li> <li>• Pregnancy test upon request of the migrant</li> <li>• HIV test for migrants with history of abuse</li> <li>• Mantoux test for TB</li> </ul> <p>i. Migrants are referred to ASP hospital or other specialist clinics as needed. An appointment is arranged and a reception centre staff accompanies the migrant to the hospital or clinic.</p> <p>j. Other notes:</p> <ul style="list-style-type: none"> <li>• TB smear or culture is not performed.</li> </ul>	<p>that the two logbooks are not the same, but the medical information being captured are similar.</p> <p>c. Medical files are also kept in a folder for every migrant seen. This is stored in the administrative office and includes a vulnerability assessment checklist just like in the first reception centre.</p> <p>d. Financial management reporting by the doctor using Excel sheet is also done.</p>	
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## Existing information technology system

Hardware / Virtual machines	Software	Network
<p>No laptop/computer in the medical consultation room at the reception centres (W)</p> <p>*For verification: availability of document scanning equipment at the reception centres for scanning lab reports, hospital discharge and specialist reports</p> <p>Test environment can be available for the new system</p> <p>New server is preferred for hosting the migrant health information system</p>	<p>ER system used for both migrants and local Italian population (O)</p> <ul style="list-style-type: none"> <li>-role-based access</li> <li>-used in all sub-offices via private network</li> <li>-used in hospitals and accredited specialist clinics</li> <li>-not used by general practitioners</li> <li>-limited functionality at present</li> <li>-compatibility issue will be resolved by September and then would be accessible to all</li> <li>-has existing interfaces with lab system and radiology system</li> <li>-has existing interface using PDF technology (women at risk?)</li> </ul> <p>No software in the camp (W)</p>	<p>No internet at reception centres (W)</p> <p>Reception centres are not linked via network (W)</p> <p>100 mbps optical fibre in IT building</p> <p>100 mbps optical fibre in hospital</p>
People	Policy	Procedures
<p>Local coordination/structure for health (S)</p> <ul style="list-style-type: none"> <li>-Regional Coordinator</li> <li>-Health Manager of Siracusa</li> <li>-Manager for Health, Refugees</li> <li>-Manager for Health, General Population</li> </ul> <p>Local Health Authority IT unit</p> <ul style="list-style-type: none"> <li>-comprised of 3 regular staff</li> <li>-16 private companies provide system development services</li> <li>-ER system developer has previous experience with interfacing systems</li> </ul>	<p>Data protection policy</p> <p>Regional plan for migrants</p>	<p>STP code has been effective in tracking migrants, facilitating continuity of care and managing payment of healthcare services (S)</p> <p>Only migrants who need special healthcare are registered in health portal (30,000 STPs generated out of 187,029 migrants recorded)</p> <p>Head count of migrants in the camp is done manually (W)</p>

<p>-no in-house capacity to absorb IT support requirements of migrant health system</p> <p>ER system users -doctors</p>		<p>Medical conditions diagnosed in the camp are collected manually by survey (W)</p>
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(S)-Strength (W)-Weakness (O)-Opportunity (T)-Threat



## High-level information system (business) requirements

Code	Requirements	Priority
BR_001	Ability to register migrants with minimal information, take photo and record triage at the landing site (port)	2
BR_002	Ability to register and take photo of migrants receiving medical care at the reception center (CAS)	1
BR_003	Registration details (CAS) must include -Biodata (Last Name, First Name, Middle Name, Date of Birth, Sex) -Other names or aliases -Date of Landing, Country of Origin -Photo -ID numbers (including STP code, fiscal code, police ID) -System-assigned unique person identifier	1
BR_004	Ability to capture migrant biometrics	2
BR_005	Toggle view of registration page to display only mandatory fields	1
BR_006	Ability to record medical check-up results at the reception center (PHR lite) -Medical history (remarks) -Vital measurements (BP, temperature, HR, RR, height, weight) -Infestation (lice, scabies) -Pregnancy (status, LMP, AOG, EDD, Ultrasound confirmation) -Physical examination (normal/abnormal, remarks) -Medical conditions / diagnosis (Description, ICD codes mapped to ASP's ER codes) -Follow-up or referral needs *For further analysis: Rules in using PHR vs PHR lite. Options: a) PHR lite is defaulted if user role is CAS doctor, and PHR is not available; b) PHR lite is defaulted if user role is CAS doctor, with option to add PHR; c) both PHR and PHR lite are always available and doctor has ability to select which one to use, there is no need for a new role.	1
BR_007	Ability to capture vaccination information -Previous vaccination -Newly received doses *Note currently there is a vaccination section in PHR initial but there is none in PHR follow-up nor in the proposed PHR lite. Vaccination record is an important element of continuity of care, however the need to capture this information as part of PHR lite was not strongly expressed. This is assigned a priority of 2; in the meantime the paper-based vaccination record seen in at least one reception centre (CAS) could be scanned and uploaded if it needs to be shared to other medical service providers.	2
BR_008	Ability to record a referral request from reception centre to hospital or specialist	1
BR_009	System at the CAS must be linked to existing ER system. ER system captures information on: -Migrant identification (Last Name, First Name, Date of Birth, Sex) -STP code	1

	-Triage (Medical condition or pathology – lookup and free text description) -All medical procedures performed on migrant -Initially the linkage/interface can be provided by export/import functionality of a HL7 XML file and/or printout on paper/PDF	
BR_010	Ability to electronically transmit triage information from landing site (port) to hospital (emergency room), including photo	2
BR_011	Ability to electronically transmit a referral request including medical history from reception centre (CAS) to hospital (emergency room), including photo; initially via HL7 XML	1
BR_012	Ability to electronically transmit ER discharge paper / medical documentation from hospital to reception centre (CAS)	2
BR_013	Ability to generate or print forms -Identification card with photo and barcode of the unique person ID -Consent form in local language/s -Referral form -Medical results form -Any uploaded report including laboratory result, hospital discharge or specialist report	1
BR_014	Ability to batch print reports -Collated reports for one person -Collated reports for group of persons	2
BR_015	Ability to record epidemiological surveillance data and generate reports	2
BR_016	Ability to generate aggregate migrant data -no. of migrants in each of 13 camps -capacity of each camp -no. of medical conditions -no. of hospital and specialist referrals -no. of migrants with STP codes (Can be implemented via reporting services.)	2
BR_017	System must be secure and must comply with Italian data protection policies	1
BR_018	System must have Italian language translation	1
BR_019	System must be capable of being expanded or replicated to other provinces in the region	1
BR_020	New role and access definition for cultural mediators	1
BR_021	Availability of ICD conditions in Italian language	2
	Ability to upload specialist report	Existing functionality
	Ability to capture follow-up examination including -physical examination -laboratory results -treatment	Existing functionality

## Scope of work

- Implement all BRs with priority 1
- Enable implementation of all BRs with priority 2
- Prepare electronic (structured PDF) of PHR Lite (attached), so that it can be generated from the system and used for offline mode via upload
- Add roles for CAS personnel
- Add new lookups for new IDs (STP) etc. per BR\_09
- Design a completely new and compact UI for data entry of PHR Lite
- Add functionality to produce HL7 XML file for data exchange
- Add function to print all forms as per BR\_013
- Print PHR Lite after completing data entry
- Ensure DB structure compatibility with current ReHealth ePHR so that data can be stored in existing DB backend

## Out of scope

- Custom photo capturing technology development
- Biometrics system development
- Development of the data exchange (interface) functionality on CAS ER system side.