



HEALTH TRACKING AND MONITORING SYSTEM

- User manual -

References:

INTERNAL USER: doctor working into the hotspot. Registration and login to the system is required. He can generate a new patient record on the system and update it. He can also save the health record on the system (PC) and into the USB device.

EXTERNAL USER: doctor working outside the hotspot. He can download the software with a previous registration and login - He can then read the health record stored into the USB device and update it with new the medical data.



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Icons:



WARNING: cases which may provoke damages to the system or data



NOTE: suggestions on how to use additional information



Please read this manual before using the USB device to ensure safe and proper use.

Care Consortium is not responsible for any performance or incompatibility problems caused by registry setting modifications or OS modifications. The attempt to modify the OS may cause malfunctioning of the USB device or of the apps.

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1 General Overview

The project "CARE – Common Approach for REFugees and other migrants' health", which has received funding from the European Union's Health Programme (2014-2020), aims to promote a better understanding of refugees and migrants' health condition as well as to support the adaptation of the appropriate clinical attitude towards refugees and migrants' health needs and in particular towards the health needs of fragile subgroups, such as minors, pregnant women and victims of violence.

Participating countries are those at the moment facing the greatest burden of the migration crisis. In fact, they are either in the middle of the Mediterranean sea (Italy, Greece, Malta) or on the Balcanian route of refugees/migrants, and their policy and actions have clearly the highest impact also on neighboring Countries, depending on the actual ability to take care of the arrivals or at least to reduce and manage such an impact.

The CARE project was designed and is implemented in close cooperation with the national and local authorities of the involved Countries and is also coordinated with the ongoing activities for the migrant population, where already existing, in order to complement them and to introduce added values of EU cooperation, increased use of multidisciplinary approaches and improvements in the monitoring of activities and potential health risks.

Upon completion of the project, more appropriate health care deliveries, increased control of infectious disease risk in the early phase of migrant's care and better taking care of migrants' health over the European territory will have been obtained.

The tracking and monitoring system

Migration is associated with mobility and movement, and migrants and refugees receive healthcare services during their journeys from a variety of countries and healthcare systems. However, their medical history, preventive and curative treatment or counselling received, are not always documented, due to the lack of a proper documentation record where health data can be stored and integrated in a follow up examination.

The CARE project provides the development of an integrated electronic system for tracking and monitoring the health status of migrants and refugees. This system encompasses a portable device to be delivered to migrants and refugees, containing their personal medical history, as well as information on any treatment provided. Moreover, a dedicated software enables healthcare professionals to access the migrants' / refugees' personal health record and integrate it in a follow up examination. Data are also provided to be stored in the local database of the hotspot / migrants' / refugees' center, where the digital device was first delivered.

Monitoring and being able to track migrants and refugees health status is expected to promote continuity of care, establishing mechanisms of cooperation between countries of origin, transit and destination. This can guarantee appropriate and targeted health assistance and health promotion for migrants/refugees, as well as for the local population. Furthermore, effective health status monitoring can also lead to avoiding any duplications in health treatment and related costs for the healthcare systems.



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2 Description of the system

The HEALTH TRACKING AND MONITORING SYSTEM is composed by:

- 1) the electronic personal health record (EPHR) registered in a USB device the migrant receive at the hotspot ¹.
- 2) the CARE stand-alone software (requires Windows OS and .NET vers. 4.5 framework).

The software allows doctors to:

- *create* an electronic personal health record for each migrant receiving health assistance;
- *manage* and *update* the data registered in the EPHR;
- *save* data in file type .pdf and in file type .csv
- *transfer* the migrant health data into the USB device, using encryption according to the privacy rules;
- *enquiry* the local DB for epidemiological purpose;



The system foresees the use of USB devices, to collect the EPHR for each patient, appropriately encrypted. The minimum characteristics required for USB device are version 2.0 or 3.0, with a storage capacity of at least 4 Gb.

¹ List of hotspots: Lampedusa and Trapani (Sicily - Italy), Koss and Leros (Greece)



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3 Registration procedures

The external users have to register themselves on <http://care.inmp.it/care/index.php/registrazione> just to request the link to download the CARE software and the personal account to use it.

Each licensed physician will be provided, along with download the tool, even with the ID and password to login.

REGISTRATION FORM FOR HEALTH TRACKING AND MONITORING SYSTEM

The (*) fields are required

(*) Last name

(*) First name

(*) Type of doctor ☐ GP ☐ Hospital Doctor ☐ NGO/Private doctor ☐ Other

Medical specialty

(*) Country
--- Select ---

(*) E-mail

(*) Confirm E-mail

☐ (*) I have read and agree to the Privacy Policy

☐ I'm not a robot

Save

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4 Functioning of the system

After downloaded the zip file CARE.zip, extract it on a personal computer based on Microsoft Windows OS with .NET framework vers. 4.5. Open it and double click on CARE .exe file to start.

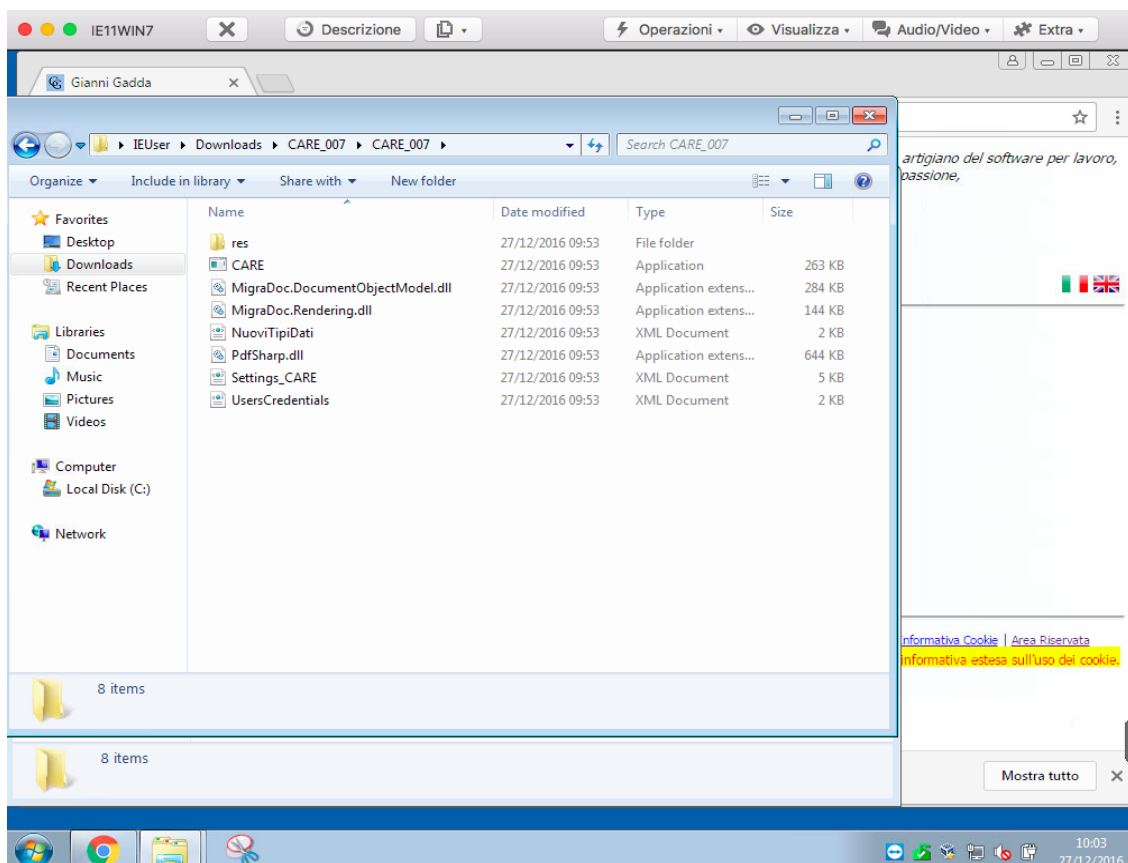


Figure 1 Compressed file CARE.zip



It could happen that the ANTIVIRUS present in the PC does not allow you to download and / or install the application, blocking it. It is enough to disable temporarily the ANTIVIRUS used, and proceed to the installation of the application, following the usual wizard.


Some examples: using AVIRA antivirus, it is sufficient to confirm permission to download and / or install the application once and for all; using AVAST, you can add a file or folder to the exceptions, by accessing the antivirus main screen (double click on its icon in the system tray); go to the Settings tab, and select Global Exclusions from the left sidebar. Then click the Search button to select the files to be excluded from scanning (or the folder that houses it) and save the settings by clicking the OK button.






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When you start to use CARE software, login is required. (Figure 2), using the ID and password received by the administrator.

Health Tracking and Monitoring System

 Exit



interoperating with 

Accesses management

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User

Password


☐ Show the Password

OK

CANCEL

Figure 2 Login form


After the login, on the screen are displayed the user personal data and the operations he is allowed to perform on the base of his own role (internal/external user).


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Health Tracking and Monitoring System Exit



interoperating with 

Accesses management

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Authenticated User
First Name: administrator first name
Family Name: administrator family name
Place: administrator place

[Patient Management](#)
[New Patient](#)
[Users Credentials Management](#)

Figure 3 – Home page for INTERNAL USER

Health Tracking and Monitoring System Exit



interoperating with 

Accesses management

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Authenticated User
First Name: demo first name
Family Name: demo family name
Place: demo place

[Refugees Management](#)

Figure 4 – Home page for EXTERNAL USER

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4.1 How to insert a new patient into the system (for the internal users only)

Click on "new patient" command and fill in the information required. Then click on the button "OK".

Health Tracking and Monitoring System
 Exit

Common Approach for REFugees
and other migrants' health

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New Patient

Personal Data

First Name

Family Name

Country of birth

Cameroon ▾

Date of birth

12/01/2017 ▾

Ok
☒ on PC
Cancel

4.2 Patient Management

Go to the command "Patient management" and click on it.
On the left you will see the list of all patients registered. Choose one patient and click on it.
At the right side of the screen you will see all the health records related to that patient. To read one health record, click the command "open record"; to insert new data (ie: after a new clinical examination) click the command "new record"; to save all health records into the USB device, click the command "copy from PC to USB device".

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Health Tracking and Monitoring System

[Exit](#)

CARE
Common Approach for Refugees
and other migrants' health

interoperating with

IT health

Patient Management

Health Records selection from

☐ USB Device Refresh

☒ PC

Refugees List

Family and First Name	Country of birth	Date of birth
Rossi Mario	Mali	10/01/1980
Rossi Mario	Mali	10/01/1980

Health Records List

Date and Time	Place	Physician
27/12/2016 15:02:48	administrator place	administrator family name
27/12/2016 15:06:43	administrator place	administrator family name
27/12/2016 15:08:22	administrator place	administrator family name

☒ Fit lists columns

[New Record](#)
[Open Record](#)
[Copy from PC to USB Device](#)
[Export Single CSV](#)
[Export All CSV](#)

Cancel

If only the personal data (see page ...) section has been filled out, it is however possible to complete the health record later on; if more patients records are present, the last file will open automatically at the access. When saving the health record, the system will mark time, date and name of the doctor who inserted the data.

4.3 Use of the USB device

To open the health record of the USB device, the doctor needs connect the device to a PC and register and login on the system.

With the login, the system allows the doctor to download the software.

The doctor has to click on the command "Patient management" to access the information. Health records will be then browsable and updateable.



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All previous data are marked with date and time of the examination as well as with the name of the previous doctor.

Patient Management

Health Records selection from

☒ USB Device [Refresh](#)

☐ PC

Refugees List

Family and First Name	Country of birth	Date of birth
Rossi Mario	Syria	25/03/1986

Health Records List

Date and Time	Place	Physician
09/01/2017 13:29:57	Lampedusa	Andrissi Laura
09/01/2017 13:35:34	administrator place	administrator family name
09/01/2017 17:05:01	Lampedusa	Andrissi Laura
10/01/2017 11:57:01	Lampedusa	Andrissi Laura
12/01/2017 12:49:18	INMP-ROMA	Diodati Alessandra

☒ Fit lists columns

[New Record](#)

[Open Record](#)

[Copy from USB Device to PC](#)

[Cancel](#)

To read one health record, click the command “open record”; to insert new data click the command “new record”; to save all health records into the USB device, click the command “copy from PC to USB device”.



WARNING: do not register a new patient into a USB device already containing other patient data, as the file will not be showed by the system


5 Health Record description

The system allows to feed the health record with patient's data. The health record is organized by sections, according to a logical clinical examination process and can be completed according to the necessity in different steps.

The record is surfable by using the bar at the top of the screen.

Data gathered are either quantitative and qualitative. In case of YES/NO answer, by choosing YES a note field opens. In case of quantitative fields, a warning mechanism makes the doctor aware of possible attention to be paid. There is an interactive session allowing to draw on a human body picture to describe lesions or injury areas, as well as to insert images and documents.

By clicking on a field name, the historical insertions will appear.

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Finally, every patient is asked to release his informed consent to the personal data treatment.


5.1 PD – PERSONAL DATA

In this section doctors are required to insert personal data of patient and information on the migratory trail ; it is possible to insert photo of the migrant; the ID refer to the identification system used into the hotspot.

Health Tracking and Monitoring System - New form  Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC

Personal Data

Photo 

First Name
Antonio

Family Name
Pola

ID
056754

Country of Birth
Italy

Countries visited in the last 30 days
Select an item Add
Iran Remove
Iraq

Available PDF files



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Health Tracking and Monitoring System - New form

PD | **IVS** | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC |

Age
27

Date of birth
14/07/1989

Accompanied minor
Accompanied minor | **Unaccompanied minor**

Sex
M | F

Marital Status
married | separated | single

Notes
Maria Nobile

Interpretation/Mediation Used
YES | NO

Height (cm)
175

Weight (Kg)
88

Available PDF files

5.2 IVS – INJURES/VITAL SIGNS

In this section vital signs and information based on physical examination are registered.

Health Tracking and Monitoring System - New form

PD | **IVS** | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC |

Injuries

Open Injuries/Cutaneous Manifestations TAB

Vital Signs

Systolic Blood Pressure
125

Diastolic Blood Pressure
88

Heart Rate
95

Oxygen Saturation (%)
92

Body Temperature (°C)
36

Selecting "Open Injuries/Cutaneous Manifestations TAB" you are able to drawing injuries and cutaneous manifestations and to upload photos.



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As far as lesions and injuries table is concerned, between **Save** and **Cancel** buttons there is **Previous data** button, which opens the historical table list with related images.



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Previous Injuries Tables and Photos


Injuries Tables	Photo
09/01/2017 13:35:34	09/01/2017 17:05:01 - Photo 1
09/01/2017 17:05:01	10/01/2017 11:57:01 - Photo 1
10/01/2017 11:57:01	12/01/2017 12:49:18 - Photo 1
12/01/2017 12:49:18	12/01/2017 12:49:18 - Photo 2
13/01/2017 17:50:01	13/01/2017 17:50:01 - Photo 1
	13/01/2017 17:50:01 - Photo 2
	13/01/2017 17:50:01 - Photo 3
	13/01/2017 17:50:01 - Photo 4

Cancel



5.3 STGOS – SKIN/TRAUMA/OBSTETRICS/SURGERY

In this section data on skin injuries and trauma are registered; if injuries are present, the doctor will have to mark YES and describe the injuries in the note field. Other fields are dedicated to Obstetrics and to previous surgery interventions.

Health Tracking and Monitoring System - New form Exit

PD | IVS | **STGOS** | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC

Skin

Description of Injuries

Yes No

Trauma

Description of Trauma

Yes No

Notes

Obstetrics

Pregnancy

Yes No

Last Menstruation

Gestational Week

Surgery


Surgical Intervention

Yes No



5.4 CE – Clinical Examination

The following sections will guide the doctor throughout a complete anamnesis and medical examination by anatomical apparatus.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | **CE** | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC

Clinical Examination

Respiratory System

[Notes](#)

Digestive System

[Notes](#)

Cardiovascular System

[Notes](#)

Nervous System and Sense Organs

[Notes](#)


Osteoarticular System

[Notes](#)



5.5 VTB – VACCINATION AND TB

In this section the doctor can register information on vaccination status of the patient and the result of clinical questionnaire on TB symptoms.

Health Tracking and Monitoring System - New form  [Exit](#)

PD | IVS | STGOS | CE | **VTB** | MH | AN/DP | PS | PPS | CDCR | ISOL | IC |

Vaccination

Previous Vaccination

Meningococcal

Tuberculosis
Meningococcal

Add
Remove

TB

TB
YES

Family member or close contact with an infectious TB
YES


Coughing. Specify if protracted coughing over two weeks
YES

Recurrent Fever
YES



5.6 MH – Malaria/HIV/HBV/HCV

In this section the doctor can describe the anamnesis for malaria, HIV, HBV and HCV.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | **MH** | AN/DP | PS | PPS | CDCR | ISOL | IC |

Malaria

Malaria

Notes

Lorem Ipsum

HIV/HBV/HCV

Have you had sex at risk in the last 6 months

HIV

HBV

HCV

Notes


Lorem Ipsum

X



5.7 AN/DP – Anamnestic Notes/Tentative Diagnosis

In this section the doctor is asked to register all relevant anamnestic information and formulate a tentative diagnosis. The doctor has to be aware that this field is mandatory in order to successfully close the patient's health record.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | **AN/DP** | PS | PPS | CDCR | ISOL | IC

Anamnestic Notes

Anamnestic Notes
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad
ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fi
occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Tentative Diagnosis

Relevant Clinical Condition
☐ YES ☒ NO


According to ICD9
001-139 Infectious And Parasitic Diseases | 001-009 Intestinal Infectious Diseases

In the system the ICD9 classification is listed for classes and subclasses only.



5.8 PS – Pediatric Section

This section allows the doctor to register data of the clinical examination of the minor as well as the result of the age assessment.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | **PS** | PPS | CDCR | ISOL | IC |

Pediatric Section

Height (cm)

Weight (Kg)

Height (Percentile)

Weight (Percentile)

BMI

Cranical Circumference (cm)

Wrist (Xray)

Male Puberty (Tanner Stage)


Puberche (I-V)

Select an item



5.9 PPS - Psychology/Psychiatry Section

This section is devoted to psychological/psychiatric description of the patient.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | **PPS** | CDCR | ISOL | IC |

Psychology/Psychiatry Section

MMSE (Mini Mental State Evaluation)

Post Traumatic Stress Disorder

Notes
Lorem Ipsum

Mental State Evaluation

Education
 Education Level
secondary

Socio-Economics Status
medium

Familiarity
mental disorder


Behavior
collaborative

General Appearance



5.10 CDCR - Clinical Diary/Clinical Recommendation

In this section it is possible to take note of performed clinical follow-ups as well as recommend further examinations and/or treatments.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | PPS | **CDCR** | ISOL | IC |

Clinical Diary

Clinical Diary

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Clinical Racommendation

Further Examination/treatment required

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.


Note

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut



5.11 ISOL - Isolation

This section is dedicated to the management of patients affected by diseases requiring isolation measures. It is possible to register a request of isolation, the treatment prescribed and the final outcome.

Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | **ISOL** | IC

Isolation

Isolation Request

YES NO

Notes

Lorem Ipsum

Treatment

YES NO

Outcome of Isolation

Treatment un Site

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Medical Outcome of Isolation



5.12 IC - Informed Consent

Health Tracking and Monitoring System - New form

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | IC

Informed Consent

Informed Consent

INFORMATION ET CONSENTEMENT AU
TRAITEMENT DES DONNEES SANITAIRES
CONFORMEMENT A LA DISPOSITION NATIONALE

Les médecins sont priés d'acquiescer un consentement écrit des patients au traitement de leur données personnelles.

Je suis bien informé de la nécessité d'acquiescer mes données sanitaires et je donne mon consentement à leur traitement

JE ACCEPT JE NE SUIS PAS D'ACCORD

Cancel



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Health Tracking and Monitoring System - New form Exit

PD | IVS | STGOS | CE | VTB | MH | AN/DP | PS | PPS | CDCR | ISOL | **IC**

Informed Consent



Signature



SaveDelete Signature

العربي



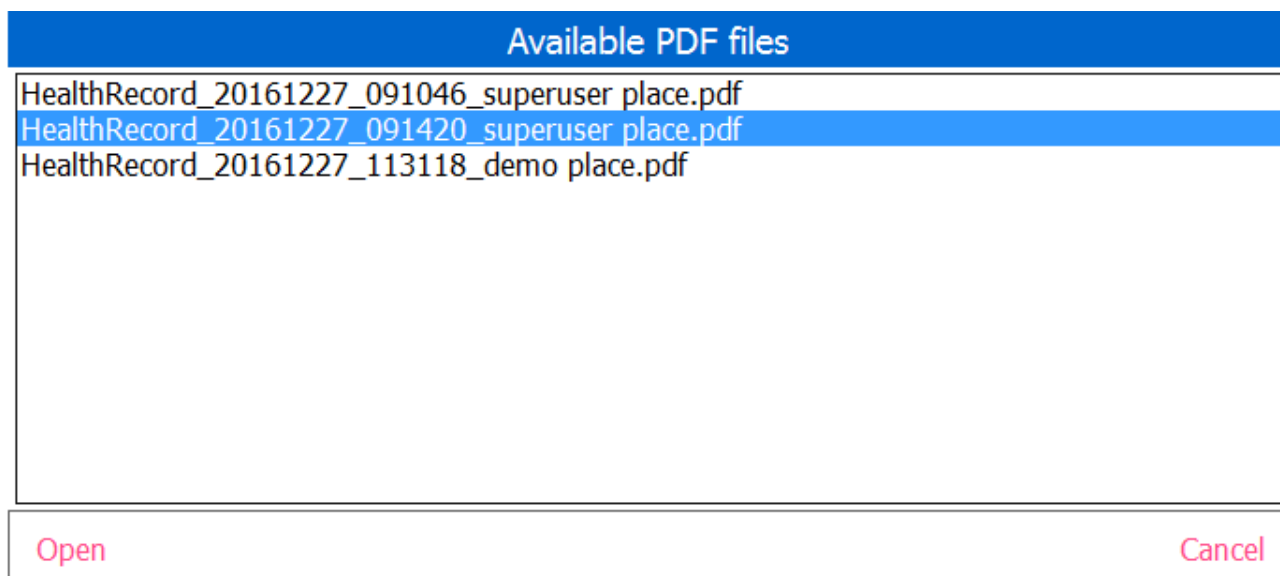
6 How to create a PDF file

When saving data, a .pdf file is created into the relevant folder, using the same name. When copying the health record into the USB device, all .pdf files are copied as well.

In case other folders of the same patient have been filled in, it appears in the screen, among the two arrows below, a button named **"PDF files available"**.



By clicking on it, a window opens displaying the list of historical .pdf files



In case of need of assistance, please do contact the following email address:
care@inmp.it



The project "717317/CARE" has received funding from the European Union's Health Programme (2014-2020)





HEALTH TRACKING AND MONITORING SYSTEM

- System access information -

If you are a doctor curing a patient who has a CARE USB device, please go to: <http://care.inmp.it/care/index.php/registrazione> to open the registration form in order to receive, via email, the URL to get the HEALTH TRACKING AND MONITORING SYSTEM software¹ and the login information.

In case of any further information need, please visit the CARE website (<http://careformigrants.eu>) or contact us at care@inmp.it

¹ The software requires a Microsoft Windows OS and the .NET Framework, version 4.5