Dream Book:
Continuity of Care for the Mobile Patient

August 2019
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The Dream: Continuity of Care for the Mobile Patient

How might we develop a system to successfully support the continuity of care for mobile populations through secure, simple, and acceptable digital means?

How can we establish a system whereby patients can store, retrieve and transfer their health information along their migration route in a way that is secure, user friendly, and transmissible, without exposing the data owner to the risk of unwilling revelation of identity and potential adverse events (communicable diseases, forced treatment to patients living with HIV or TB, refusal of entry due to certain pathologies, etc.)? The system should be simple and self-contained enough to be equally adopted by other health care providers.

“As a start, any solution that could help people to keep a copy of their medical records or to facilitate translation would be very useful”

Sara AL-Khateeb, Health Promotion, MSF mission in Greece
Dream Session
Run a design thinking-led workshop to envision innovative scenarios with the highest impact

“...I greatly recommend this process to any NGO who has a meaningful challenge to solve, because it allows deep discussion of direction and to dig deeper with different perspectives to align on the challenge with a variety of ideas to reach a better solution.”

Greg Castella, Innovation Coordinator, MSF
Detailed Dream Session Process and Outcomes

1. Defining healthcare workers and patients in a **Persona** and **Journey Map**

2. Identifying current Pains, Needs, Trends and Technology and creating **Initial Ideas** and vote to move them forward

3. Brain Writing – **Expanding Ideas** and voting for improvement

4. Applying ideas to a "To Be" Journey Map for an **Improved Experience**

5. Clustering ideas into themes, creating solutions, and **Prioritizing for Impact**

6. Pitching the Persona’s most interesting **Solutions**

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Human-centered design sits at the intersection of empathy and creativity. We use human-centered design to conceive products, services, and experiences that improve medical assistance to people who are affected by conflict, epidemics, disasters, or exclusion from healthcare.

At the Dream Session, four teams used Design Thinking to create potential solutions for four personas – two patients and two healthcare workers – while the inclusion of other health care providers.
## Common Pains, Needs, Trends, and Technology (PNTT) across Personas

### PAINS
- Little community or family support
- Getting and understanding medicines
- Cultural differences
- Violence and the fear of violence
- Language barriers
- Access to health services on their schedule
- Access to mental health services
- Selfcare: Diet, Hygiene
- High family expectations or needs
- Fear of getting stuck without hope of progress or return

### NEEDS
- Easy access to medicine, medical and mental health consultation, plus some level of choice
- Feel safe all along the way
- Safe route maps to final destination, with progress markers and what's next.
- The right legal and health papers
- Connection with community, friends, and family
- Nutritious food and ability to keep clean
- Information about available services

### SOCIETY TRENDS
- Increased violence, including sexual violence
- Refusing or restricting immigrants, sending people back
- Increased confinement in camps
- Increased hostility and exclusion by host country
- Increased social media, rumors
- More NGOs helping but experiencing compassion fatigue
- Longer conflicts/wars
- Politicization
- Criminalization of already dangerous routes

### TECHNOLOGY
- Cloud services
- Collaborative documents
- Cheap smartphones, portable SIM cards, charging ease
- Better privacy and data encryption
- Biometry
- Mapping technology
- Easier user experience
- Fast internet connectivity
- Social networking
- Easier contact with family and friends
- Digital skills training
- Language translation

### Patients
- Language barriers
- Lack of follow-up activities with patient
- Work overload – too many patients, insufficient time, high expectations
- Cultural differences
- Stress due to experience (self or others)
- Gathering and keeping patient information secure/private

### Healthcare Workers
- Complete medical history and easy data management
- Quality translation services
- Personal and job security, benefits
- Psychological support with past trauma
- Feeling of agency, appreciation, trust, and respect
- More training
- Recognition of own Journey

### Healthcare Workers
- More group counselling, cultural mediation, mental health needs
- Closure of borders and utilization different routes
- Fewer health providers for more patients resulting in increased workload
- Digital connectivity everywhere, more access to information
- Identity and data privacy rules
- One shot consultation and distance follow-up

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Opportunities Identified During Ideation

High impact features with best votes

Outcome of Ideas from PNTT Analysis

- Patient-HCW Communication
- Secure Data
- Language
- Patient Community Communication
- Health Information Resources
- Geo-Mapping
- HCW Peer to Peer groups

Automated Patient Follow-up
Health Vault - Secure Digital Health Record
Real-time Language Translation
Health Promoter Moderated Group Chats
Medical "Rosetta Stone"
Safe Route Planning
HCW-to-HCW Communication

Connect to MSF/MDM/ICRC HCW
Document and Photo Vault
Translations of Languages in Photos
Ratings of Services
References Library
Services Availability
Health Care Worker Support

Language Training
Connect with other refugees or patients

General Requirements:
- Patient permission driven access
- Highest level of security
- Access via Smartphone, feature phone, or tablets
- Some features available via SMS
- Access via kiosk
- Mapping – e.g., risks, routes, services, friends
- Social Ratings – e.g., services, routes, service providers
- Finder – e.g., drugs, friends, service providers
- Integrations with healthcare platforms and commercial services – e.g.

- Facebook, Box
- Standards-based – e.g., HL7, ID2020
- AI integrations – e.g., language translations, suggestions, data collection
- Share data – e.g., Bluetooth, email, printing
- App integration via HealthKit, Google Fit
## Feature Value Proposition

<table>
<thead>
<tr>
<th>Feature</th>
<th>Feature Value Proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Vault – Secure Digital Health Record</td>
<td>This feature allows patients to keep track of all their health details whether managing complex health issues or just to keep informed about their wellness. Examples include: medications, allergies, health history, fitness, blood pressure, lab results, conditions and illnesses, x-rays, scans, and other images. The patient can easily share information with healthcare professionals that they trust so that they can provide guidance or coordinate health management, including sharing information with pharmacies including prescription history, drug names and availability.</td>
</tr>
<tr>
<td>Connect to MSF/MDM/ICRC HCW</td>
<td>This feature allows patients to reconnect directly with healthcare professionals from MSF, MDM, etc. who will provide them with expert medical information based on their history and tailored to their health situation.</td>
</tr>
<tr>
<td>Emergency Mental Health Consultation</td>
<td>This feature will allow patients to connect with mental health professionals in emergency situations.</td>
</tr>
<tr>
<td>Real-time Language Translation</td>
<td>This feature can translate between two people speaking different languages in real-time “Interpreter Mode.”</td>
</tr>
<tr>
<td>Health Promoter moderated group chats</td>
<td>This feature allows patients to participate in online chats for patients and their families led by Health Promoters. The chats are safe places for patients to ask questions, discuss concerns, and offer each other support.</td>
</tr>
</tbody>
</table>
## Four Solutions Based on the Best Features

<table>
<thead>
<tr>
<th>TRUST VAULT</th>
<th>HEALTH CLOUD</th>
<th>PROJECT MERCURY</th>
<th>TOOLKIT CLINICIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure storage of data</td>
<td>Secure Digital Health Record</td>
<td>Communication and Collaboration</td>
<td>Integrated apps in one package</td>
</tr>
<tr>
<td>Health Vault- Secure Digital Health Records</td>
<td>Connect to MSF/MDM/ICRC HCW</td>
<td>Health Vault- Secure Digital Health Record</td>
<td>Connect to MSF/MDM/ICRC HCW</td>
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<tr>
<td>Connect to MSF/MDM/ICRC HCW</td>
<td>Connect to MSF/MDM/ICRC HCW</td>
<td>Automated Patient Follow-up</td>
<td>Health Vault- Secure Digital Health Records</td>
</tr>
<tr>
<td>Safe Route Planning</td>
<td>Translations of Languages in Photos</td>
<td>Emergency Mental Health Consultation</td>
<td>Medical &quot;Rosetta Stone&quot;</td>
</tr>
<tr>
<td>Document and Photo Vault</td>
<td></td>
<td>Consultation Scheduling</td>
<td>Services Availability</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Safe Route Planning</td>
</tr>
</tbody>
</table>

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**WIPFLI, Microsoft, NET HOPE**

August 2019
Solution 1

TRUST VAULT - Secure storage of data

Description
This app can be used by migrants to store documents, like ID, pictures, legal documents and medical records. The medical record part allows migrants to store the documents they receive from a medical doctor but would also include a section where only “registered” medical staff could upload data and view the clinical record. The secured medical record vault would interface with MSF’s existing e-health systems, where available, thus providing a credible, controlled medical record for the migrant. “Registration” would be complete for organizations that join the project and then would be included in a secured protocol for uploading new data to the continuous record. Other possible features of the app include maps of available services for migrants, as well as risk maps, designed according to feedback from the community (of app users). The advantage of this solution would be that the migrant can just show the documents/records to any medical providers he or she encounters (even if this provider is not aware of this project), but would also have a section where “registered users” could upload and download controlled, credible information to/from the medical record.

Specs
- Consultation live updates
- Anonymized data centrally-stored
- Structured medical data
- Remote app, wi-fi, web-based
- Authentication/handshake
- Layered content security

Features
- Connect to MSF/MDM/ICRC HCW
- Document and Photo Vault
- Health Vault - Secure Digital Health Records
- Safe Route Planning

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## Solution 2

### HEALTH CLOUD - Secure Digital Health Record

**Description**

This solution focuses on an EMR that could be accessed by a patient at any time in their migration journey and to which a patient may grant an access to a doctor during a medical consultation. The solution’s purpose is to facilitate the current process; it is NOT aiming to replace existing paper-based systems. Characteristics of the solution:

1. The system represents a **light structured digital medical record** with patient consultations’ list by time. Minimal viable medical information for a structured record should be defined.
2. Patient can **access this medical record through a mobile application** at any time by using their **biometry**.
3. When visiting a health provider, part of Health Cloud users’ consortium (e.g., MSF), patient can grant medical staff a temporary access to his/her medical history (technical solution for granting access still to be defined). In this case medical staff should be able to create a new consultation or update an existing one within the solution.
4. If visiting a doctor who is NOT yet part of the consortium of Health Cloud users, **patient can simply scan a medical document** related to their diagnosis and an automatic translation and structured registry of the data, including the picture of the paper document, should be created by the solution.

**Specs**

- Data owned by patient and access controlled by patient
- Application advocated by NGO
- Encrypted, secure, anonymous
- Cloud-based system
- App on smartphone
- Does not require full-time internet

**Features**

- Health Vault - Secure Digital Health Record
- Connect to MSF/MDM/ICRC HCW
- Translations of Languages in Photos
# Solution 3

**PROJECT MERCURY Communication and Collaboration**

## Description

This solution stores the patients’ medical files, including investigations, and patients have control over who is able to access to the files. Variable access can be granted to different healthcare workers – broader access to the primary health care provider, and access limited by time (short-term access, e.g. to the non-primary care provider), or by ability to upload information but not retrieve it from the system. Patients have a phone number to access Mercury using a code that identifies their specific file. They can send information to their Mercury account, request virtual appointments with care providers linked to the system, and receive information from care providers, including regular patient educational messages. The system also links to existing appointment systems in MSF clinics for appointments to be made.

## Specs

- Upload medical information
- Always available
- Secure Identity protection
- Choose who else has access
- SMS conversations and health messages

## Features

- Health Vault: Secure Digital Health Record
- Automated Patient Follow-up
- Emergency Mental Health Consultation
- Consultation Scheduling
# Solution 4

## TOOLKIT CLINICIA Integrated apps in one package

### Description
This solution focused on the **health worker perspective** at developing a simple EMR that would provide the clinician **essential medical history** of the migrant and that the clinician could continue to record their consultation with the migrant. This could then be carried by the migrant with them on their journey. This would be accompanied with a

- photo app that translates the captured image (e.g., certificate),
- a **Journey map with health risks** (developed, updated by MSF) and
- **Medical Jargon** - medical lexicon with basic terms and names of medicines in the most-common languages.

### Specs
- Training app for toolkit proficiency
- Symbols to augment text
- Shareable/social media app

### Features
- Health Vault - Secure Digital Health Record
- Connect to MSF/MDM/ICRC HCW
- Medical “Rosetta Stone”
- Services Availability
- Safe Route Planning
Simple Prioritization of Key Functional Areas

High impact features with best votes

- HCW-to-HCW Communication
- Medical "Rosetta Stone"
- Connect with other Refugees or Patients
- Automated Patient Follow-up
- Translations of Languages in Photos
- Health Promoter Moderated Group Chats
- Consultation Scheduling
- Document and Photo Vault
- Health Care Worker Support
- References Library

Low Impact on Patient

- Language Training
- Ratings of services

OUT OF SCOPE

- Expert Consultation
- Emergency Mental Health Consultation
- Services Availability
- Safe Route Planning
- Real-time Language Translation
- Health Vault - Secure Digital Health Record
- Connect to MSF/MDM/ICRC HCW

Health Promoter

High Impact on Patient

- Health Vault - Secure Digital Health Record
- Connect to MSF/MDM/ICRC HCW
- Real-time Language Translation
- Services Availability
- Safe Route Planning

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Moving into Design – Assumptions and Challenges

Technical landscape
- Most mobile patients have smartphones and data networks have increasing availability.
- Many features already exist using a variety of platforms – e.g., Facebook groups for connecting with other refugees or patients.
- Platforms continue to have privacy concerns.
- Consent-based data access controls to healthcare information is understood with available frameworks.
- Well known standards for healthcare information exchange such as HL7 FHIR CCD and the Argonaut Project adopted by major tech companies.

TO DO: Develop market awareness by continual research of existing technology in relation to Health Vaults and Medical Records Management.

Connect Coalition
- NGOs and public healthcare institutions need to coordinate and come to agreement over identity and data ownership.
- A strong privacy policy and supporting technology needs to be easily communicated to the patient.
- Large scope with many different technologies

TO DO: Engage with other leading Refugee and Healthcare providers and Technology Partners in the development of a common Dream and Design based on MSF’s Dream.

Assessment Framework
- Patient and HCW surveys on impact and outcomes
- Use within MSF interactions
- Data uploads and app use frequency
- Time or quality improvements in interactions

TO DO: Develop “What does success look like” statements

Change Management
- Ability to build and implement it with HCW iteratively.
- Easy access to patients to validate ideas within an entire route - not just single country
- Culture of learning - okay to try things out
- Current paper-based passport to mirror

TO DO: Validate the Dream by conducting a mini Dream Session with patients and healthcare workers in Greece.
TO DO: Iterate on the Design and Prototypes through individuals countries and routes.

Communications Plan

TO DO: Develop a clear communications strategy with MSF about the Dream and planned next steps.
<table>
<thead>
<tr>
<th><strong>The Example of Benish and Her Journey with an Integrated Solution</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benish visits her local Clinic. HCW conducts a travel medicine consultation and informs her that she can have her health data kept securely on her phone (Trust Vault, Health Cloud, Project Mercury, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish spends a few minutes with the application’s intuitive wizard, adding her information. (Trust Vault, Health Cloud, Project Mercury, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish leaves Afghanistan, with her documents! (Trust Vault, Health Cloud, Project Mercury, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish crosses into Iran, safely, using the Risk Map feature (Trust Vault, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish goes to a pharmacy, and uses a lexio/translation service to communicate to the pharmacists about which &quot;local&quot; version of her medicine she needs. (Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>She crosses into Turkey via safe route, and registers at the camp. (Trust Vault, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish visits UNHCR: Vaccine + SRH + Med docs and uses translator to help communicate with people in Turkey. UNHCR enters data into a platform which allows broader permissions-based access. (Trust Vault, Health Cloud, Mercury, Toolkit Clinica)</strong></td>
</tr>
<tr>
<td><strong>Benish then travels by boat to Samos.</strong></td>
</tr>
</tbody>
</table>
Benish registers, consults at Samos hospital, and is given AMKA numbers (Health Vault, Trust Vault + Toolkit Clinicia).

Benish goes to Med’EqualiTeam for SHR consultation. (Trust Vault, Health Cloud, Toolkit Clinicia)

Benish goes to an MSF OCG team for psychological consultation due to camp conditions and wait times. (Mercury)

Benish travels to Athens, safely. (Trust Vault, Toolkit Clinicia).

Benish visits OCG DCC for SRH. (Trust Vault, Health Cloud, Project Mercury, Toolkit Clinica)

Benish delivers a healthy baby boy at a public hospital in Athens. (Trust Vault, Health Cloud, Project Mercury, Toolkit Clinica)

Benish travels to Germany safely.

Benish has a mandatory consultation in Germany.
Appendices
Summary of the Dream Session Journey

**Introduction Call**
Dec. 27, 2018

- **Refine the Scenario**
  - Dream, design, deliver framework; context, vision, and dreams
  - Who is instrumental in the dream
  - Decision Making Process
  - Define next steps

**Dream Orientation**
Introduction
- Dream, design, deliver framework; methodology; approach; Define next steps

**Session Orientation**
Introductions
- Validate as is problem areas, journey maps, and key pain points;
- Set session expectations; Define next steps

**DAY 1 MORNING**
Introduction
- Design thinking activities to validate key problem areas
- Confirm top ideas and select finalists to develop and pursue
  
**Finalized Dream and Personas**

**DAY 1 EVENING**
Introductions
- Activities to get to know each other
- Inspirational digital transformations examples
  
**DAY 2 MORNING**
Session to formulate vision of digital transformation
- Activities to develop value proposition, underlying concept, visual prototype, and proposed pilot idea for each finalist idea

**DAY 2 AFTERNOON**
Each group pitches their fully developed idea to the room
- Reflections on session progress
  
**DREAM BOOK DELIVERY**
Collaborative development of the final Dream Book

**Finalized Dream and Personas**

**Initial Dream Statement**
FEB 18

**Refine the Dream**
MAR 4

- Dream, design, deliver framework; MSF: context, vision, and dreams
- Description of the dream
- Refine the dream through persona development and journey mapping
- Define next steps (including individual and small group interviews)

**Session Orientation**
Introductions
- Validate as is problem areas, journey maps, and key pain points;
- Set session expectations; Define next steps

**DAY 1 MORNING**
Introduction
- Design thinking activities to validate key problem areas
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**Finalized Dream and Personas**

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**DREAM BOOK DELIVERY**
Collaborative development of the final Dream Book

**Finalized Dream and Personas**
Selected Dream Session Personas

**Adnan**
Hypertension and Traumatized by War

- **Age:** 45
- **Sex:** M
- **Country/Region:** Syria
- **Language(s):** Arabic, some English
- **Profession:** taxi driver
- **Reason for migration:** war, better life
- **Health state/issues:** hypertension, mental health
- **Traveling alone**

**Sharif**
Health Promoter

- **Age:** 25
- **Sex:** M
- **Country/Region:** Greece (origin), Afghanistan
- **Language(s):** Dari, English
- **Profession:** Health Promoter
- **Location:** Samos, Athens

**Benish**
Pregnant Mother and Infant

- **Age:** 22
- **Sex:** F
- **Country/Region:** Afghanistan, Deykundi
- **Language(s):** Dari
- **Profession:** housewife
- **Reason for migration:** war
- **Health state/issues:** SRH and maternal health, psychological distress
- **Travelling with her family**

**Daphne**
NCD Nurse

- **Age:** 35
- **Sex:** F
- **Country/Region:** Greece
- **Language(s):** Greek, English
- **Profession:** Nurse
- **Location:** MSF, DCC, Athens
Persona Profile: Single Man Traumatized by War (Adnan)

Bio: Adnan was the 3rd boy of his parents. Not having money to go to university, he worked as a taxi driver in Aleppo. Seven years ago he was diagnosed with hypertension.

He was once held for a short time in an Aleppo prison for participating in protests. In prison his state got worse. He lost most of his family during Syrian conflict and fled to the North without any documentation when Aleppo was taken by ISIS.

He crossed the border to Turkey. With other Syrians, he crossed the country, buying medicine in local pharmacies. He went once to a public hospital to get treatment.

Adnan got to Lesbos by boat where he was receiving MSF OCB support for NCD and a health passport. He was identified as a mental health patient by MSF OCB because of war violence trauma. His psychological state got worse because of too long a wait for help and horrible living conditions.

After 1 year, Adnan was sent with some migrants to Athens where he frequents MSF DCC. He lives with other Syrians as a squatter. His final destination is Sweden through the Balkan route.

Goals / Needs:
- Temporary or permanent medical relief for his health condition
- Prescription to buy drugs

Challenges / Fears:
- Payment for health care
- Torture

Personality:
- Introvert
- Extrovert
- Distrusting
- Trusting

Age: 45
Sex: M
Country/Region: Syria
Language(s): Arabic, some English
Profession: taxi driver
Reason for migration: war, better life
Traveling alone
Health state/issues: hypertension problem, mental health
# Adnan’s “As Is” Journey Map

## Steps

### Patient Actions

<table>
<thead>
<tr>
<th>Steps</th>
<th>Patient Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit Hospital</td>
<td>Brings and stores medical docs</td>
</tr>
<tr>
<td>CROSS TURKEY</td>
<td>Regularly takes drugs; visits pharmacies</td>
</tr>
<tr>
<td>MIGRATION TO GREECE</td>
<td>Visits public doctor</td>
</tr>
<tr>
<td>STAYING IN GREECE</td>
<td>Loses documents</td>
</tr>
<tr>
<td>MIGRATION TO ATHENS</td>
<td>Registration + mandatory consultation on Lesbos</td>
</tr>
<tr>
<td>TRANSFER TO ATHENS</td>
<td>Requires multiple consultations</td>
</tr>
<tr>
<td>STAYING IN ATHENS</td>
<td>Takes docs with him</td>
</tr>
<tr>
<td>MIGRATION THROUGH BALKANS</td>
<td>Multiple visits of OCG DCC in Athens</td>
</tr>
<tr>
<td>SWEDEN</td>
<td>Visits public specialist</td>
</tr>
<tr>
<td>SWEDEN</td>
<td>Buy drugs</td>
</tr>
<tr>
<td>SWEDEN</td>
<td>Mandatory consultation in Sweden</td>
</tr>
</tbody>
</table>

## Touch Points

<table>
<thead>
<tr>
<th>Health Institution Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit Hospital</td>
</tr>
<tr>
<td>CROSS TURKEY</td>
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<tr>
<td>MIGRATION TO GREECE</td>
</tr>
<tr>
<td>STAYING ON LESBOS</td>
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<tr>
<td>TRANSFER TO ATHENS</td>
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<td>STAYING IN ATHENS</td>
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<td>MIGRATION THROUGH BALKANS</td>
</tr>
<tr>
<td>SWEDEN</td>
</tr>
<tr>
<td>SWEDEN</td>
</tr>
</tbody>
</table>

## Gains

<table>
<thead>
<tr>
<th>Patient</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Long waiting, mental state degradation</td>
</tr>
<tr>
<td>Language</td>
<td>Waiting</td>
</tr>
<tr>
<td>Full treatment</td>
<td>No drugs without prescription</td>
</tr>
</tbody>
</table>

## Pains

<table>
<thead>
<tr>
<th>Medical</th>
<th>Pains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Patient can simulate diseases to receive a vulnerability status</td>
</tr>
<tr>
<td>Language</td>
<td>Limited access to previous medical data</td>
</tr>
<tr>
<td>Language</td>
<td>Limited access to previous medical data</td>
</tr>
</tbody>
</table>
# “As Is” Pains, Needs, Trends and Technology (PNTT)

<table>
<thead>
<tr>
<th><strong>PAINS</strong></th>
<th><strong>NEEDS</strong></th>
<th><strong>TRENDS</strong></th>
<th><strong>TECHNOLOGY</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No family</td>
<td>Medicine/treatment</td>
<td>Increased violence</td>
<td>Social media</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Feel safe</td>
<td>Refusing immigrants</td>
<td>Cloud services</td>
</tr>
<tr>
<td>No community</td>
<td>Route maps to Sweden</td>
<td>Crowded camps</td>
<td>Collaborative documents</td>
</tr>
<tr>
<td>Getting medicine</td>
<td>Sense of progress</td>
<td>Increased hostility</td>
<td>Cheap phones</td>
</tr>
<tr>
<td>Cultural arguments</td>
<td>Transportation</td>
<td>Greater social media</td>
<td>Better privacy</td>
</tr>
<tr>
<td>Fear of violence</td>
<td>The right travel papers</td>
<td>Compassion fatigue</td>
<td>Data encryption</td>
</tr>
<tr>
<td>Language barriers</td>
<td>Someone to listen</td>
<td>Closing borders</td>
<td>Biometry</td>
</tr>
<tr>
<td>Health services</td>
<td>Bathroom</td>
<td>Fake news</td>
<td>Mapping technology</td>
</tr>
<tr>
<td>Social services</td>
<td>A friend</td>
<td>Political maneuvering</td>
<td>Distributed apps</td>
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<td>Keeping clean</td>
<td>OK food</td>
<td>Longer conflicts/wars</td>
<td>Artificial intelligence</td>
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<td>Doubt about future</td>
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<td>Sending people back</td>
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<td>Family expectations</td>
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<td>Politicization</td>
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<tr>
<td>Getting stuck in Greece</td>
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</table>

Adnan

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WIPFLI, Microsoft, NETHOPE

August 2019
Brainstorming, Clustering/Voting Ideas Into Themes

**BOT ADVICE & TRANSLATION**
- Translation application (medical base)
- App that recognizes language and dialect
- App indicates need for consultation

**TRUST MAPPER**
- Trust network mapping; map paths of information
- Trust-rated sources of facts
- Friends, services, reliable information

**RANDOM STAND-ALONE**
- What’s app account conversion center as phone charge
- Free 2020 soccer world cup broadcast
- Take time to discuss medical fears and health beliefs

**DIGITAL VAULT FOR MEDREC**
- Mobile app stored health documents
- Dropbox for migrants
- On-line bank and exchange

**JOURNEY MAPPER**
- Journey map with tips for migrants along the route
- Drug and medical service finder
- Friend finder (fellow) migrants and host residents
"To Be" Journey Map

**Adnan**

**Steps**

**Patient Actions**

- Visit Hospital
- Cross Turkey
- Migration to Greece
- Staying on Lesbos
- Transfer to Athens
- Staying in Athens
- Migration through Balkans
- Sweden

**Touch Points**

**Health Institution Actions**

- Diagnostics and treatment + prescription
- Sell drugs without prescription
- Prescribe drugs
- Give AMKA number and prescriptions
- Give database printout
- Follow-up NCD + vaccination + TMS
- Follow up NCD
- Tests
- Sell drugs
- Complete analysis

**Pains**

- Stress before leaving
- Long waiting, mental state degradation
- No drugs without prescription
- Language waiting
- No full treatment

**Gains**

- Has more detailed info
- Has translation app
- Has app
- Get vulnerability status
- Has database
- App in use and Dropbox docs
- Full treatment

**Medical**

- Patient has generic names
- Trusted Pharmacy list
- Patient has validated information
- Secure doc backup
- Patient has app and printout
- Has app and database
- Medical record available
- Data and history available
Mapping Themes and Selecting a Preferred Solution

- **Easier Implementation**
  - Trust Vault
  - Local services and risks on map to plan journey
  - Secure repository of medical records and other docs
  - Trust-rated local services and other info

- **Low Impact on Patient**

- **High Impact on Patient**

- **Difficult Implementation**
Solution Pitch – “Trust Vault”

Secure storage of medical data:
- Remote app, wi-fi, web based
- Authentication/handshake
- Layered content security
- Legal documents
- Photos
- Scanned medical records
- Active prescriptions
- Proximity map features w/layers
- Structured medical data
- Health map
- Medical terms/translation
- Consultation live updates
- Anonymized data centrally stored
Persona Profile: Pregnant, Mother w/Child (Benish)

**Bio:** Benish came from a poor rural region. She got married at the age of sixteen and has been doing housewife duties since then. Her husband was the only source of revenue for the family as a shepherd.

After delivering their first baby girl, because of the unsecure situation, they decided to leave the country and go to Germany, where a big Afghan community and their distant relatives live.

They sold all their property and went to Iran by car and then by foot and public transport to Turkey. In Turkey they stayed in a local camp and got healthcare from UNHCR, providing vaccinations and medical documents.

Then by boat they came to Samos. Benish was visiting MedEqualiTeam for SRH and maternal health (because she was pregnant). Long waiting and camp conditions made her ask for psychological help from MSF OCG.

After reaching Athens, she visited OCG DCC for SRH and delivered her baby boy in a public hospital. Finally, after 3 years of travelling, they reached Germany.

**Goals / Needs:**
- Cares about her children
- Wants to deliver in a safe place

**Challenges / Fears:**
- Language barrier
- Fear of (sexual) violence on her journey
- Exposed to high stress situations

**Personality:**
- Introvert
- Extrovert
- Distrusting
- Trusting

**Age:** 22
**Sex:** F
**Country/Region:** Afghanistan, Deykundi
**Language(s):** Dari
**Profession:** housewife
**Reason for migration:** war
**Travelling with her family**
**Health state/issues:** SRH and maternal health, psychological distress
Benish’s “As Is” Journey Map

**STEPS**
- **DEPARTURE FROM AFGHANISTAN**
  - Leaves without any documents
- **CROSS IRAN**
  - BUYS DRUGS IN PHARMACIES
- **STAYING IN TURKEY**
  - REGISTRATION AT THE CAMPS
  - MULTIPLE SRH CONSULTATIONS
  - REGISTRATION + MANDATORY CONSULTATION ON SAMOS
- **STAYING IN GREECE**
  - MULTIPLE SRH CONSULTATIONS
  - LOSE DOCUMENTS
  - REQUIRE MULTIPLE SRH CONSULTATIONS (PREGNANCY)
- **TRANSFER TO ATHENS**
  - MULTIPLE VISITS OF OCG DCC IN ATHENS
  - DELIVERY
- **STAYING IN ATHENS**
  - OCG DAILY CARE CENTER ATHENS
  - ATHENS PUBLIC HOSPITAL
  - REQUIRES MULTIPLE SRH CONSULTATIONS (PREGNANCY)
  - GERMANY

**PATIENT ACTIONS**
- **LEAVES HOME**
  - PHARMACY
  - SELL DRUGS WITHOUT PRESCRIPTION
  - BUYS DRUGS IN PHARMACIES
  - REGISTRATION AT THE CAMPS
  - MULTIPLE SRH CONSULTATIONS
  - REGISTRATION + MANDATORY CONSULTATION ON SAMOS
  - MULTIPLE VISITS OF OCG DCC IN ATHENS
  - DELIVERY

**TOUCH POINTS**
- **LEAVES HOME**
  - PHARMACY
  - UNHCR
  - SAMOS HOSPITAL
  - MSF OCG
  - OCG DAILY CARE CENTER ATHENS
  - ATHENS PUBLIC HOSPITAL

**HEALTH INSTITUTION ACTIONS**
- **LEAVES HOME**
  - PHARMACY
  - UNHCR
  - SAMOS HOSPITAL
  - MSF OCG
  - OCG DAILY CARE CENTER ATHENS
  - ATHENS PUBLIC HOSPITAL

**PAINS**
- **LANGUAGE**
  - Stresses by police
  - Long waiting
  - Very long time waiting for Athens hospital appointments
  - Language
  - Limited access to previous medical data
  - Confusion between Mediquality Team and MSF records
  - Language
  - No prescription required
  - Free Care
  - No access to previous docs
  - Docs in bad state

**GAINS**
- **FREE CARE**
  - Language
  - Long waiting
  - Very long time waiting for Athens hospital appointments
  - Language
  - Limited access to previous medical data
  - Confusion between Mediquality Team and MSF records
  - Language
  - No prescription required
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**MEDICAL**
- **LANGUAGE**
  - Stresses by police
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  - No access to previous docs
  - Docs in bad state
### Pains
- Sexual violence
- Support for mental health
- Dead end – no way back
- Low literacy – can’t read
- Lack of skills
- Language barriers
- No smartphone
- Food, nutrition and diet
- Daycare support
- Fear and distress

### Needs
- Safe passage
- Smartphone
- Info and services
- Hygiene
- Legal/health papers
- Education
- Skills training
- Family and friends
- Food and shelter
- Asylum status
- Female doctor
- Translator
- Mental health consult

### Trends
- Confinement
- Unsafe home society
- Numbers of children
- Difficult assimilation
- Access to services
- Not welcome
- Criminalization
- More NGOs helping
- Social exclusion
- Restrictive policies
- Dangerous routes
- Sexual violence

### Technology
- Digital doc sharing
- Contact relatives
- Smartphones
- Portable sim cards
- Digital identity
- What’s app
- Digital skills training
- Health info access
- Connectivity
- Language translation
- Telemedicine
- Phone charging ease
**“To Be” Journey Map**

**Steps**
- Arrival in camp
- Registers with authorities
- Notifies MSF of past/current diagnoses
- Gets Orientation to system
- Medical appointment
- Medical tests
- Pre-movement Check-up
- Finds accommodation
- Move to Athens
- Arrives at DCC in Athens

**Patient Actions**
- Electronic Appointment sent
- Electronic reminder setup
- Check-up, meds order tests and educate
- Results sent on to clinic for follow-up
- Longer-term meds provided for travel
- HP provides list of accommodations and requests DCC
- Handoff to Athens is done and e-files are shared

**Health Institution Actions**
- Notification to HP For Welcome
- Electronic reminder setup
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**Touch Points**

**Patient Gains**
- New environment, rules, people and language
- Immediate info, welcome, focus
- Easier access to care
- Gets care and drugs
- Easier service
- Drugs and info for travel
- Another new place, people and services
- Full treatment

**Patient Pains**
- More work, language barrier
- Workload
- More responsibility to follow-up
- Workload

**Medical Gains**
- Easier tracking of new patients
- Quicker process
- Easier to do
- Easier, shared info
Mapping Themes and Selecting a Preferred Solution

- Toolkit Clinicia – all apps in one package
  - Training app for migrants
  - Vault for storing key documents
  - Map routes for resources and risks
  - Terminology translation app
Solution Pitch – “Toolkit Clinicia”

Integrated apps in one package:
• Translation app for consultation
• Medical lexicon translation
• Risk mapping for safe travel
• Weather mapping for stop/go travel
• Facilities mapping for travel help
• Training app for toolkit proficiency
• Symbols to augment text
• Shareable/social media app
Persona Profile: MSF Health Promoter (Sharif)

Bio: As an MSF Health Promoter, Sharif is working with communities in camps for new arrivals coming in from Turkey.

Dari is his native language. He had begun studying engineering in Kabul, where he also learnt English and became a private English teacher.

Sharif fled to Europe, because of security and lack of professional prospects, to complete his studies.

He has a wide network of friends/family who also fled Afghanistan for Germany.

He works for MSF 3 days/week for 7 months now while waiting on Samos for his asylum request to be processed.

Sharif is working as well for Samos Volunteers a couple days per week.

Goals / Needs:
• Reach new arrivals with multiple health and psychosocial needs – some have spent years getting to Greece to find themselves stuck on the islands.
• Introduce MSF and explain MSF mission and services to patients.

Challenges:
• Target population has experienced significant exposure to physical and sexual violence, either as a victim or witness (men, women and children).
• Ensuring confidential space to discuss sensitive issues and fast-track specialist referrals.
• Convincing people on added value of MSF services.

Technology Preference:
Paper
Digital

Age: 25
Sex: M
Country/Region: Greece (origin) Afghanistan
Language(s): Dari, English
Profession: Health Promoter
Location: Samos, Athens
Pains, Needs, Trends and Technology (PNTT)

**PAINS**
- High expectation/pressure
- Heavy workload – 2 jobs
- Lack of medical experience
- Large geographic coverage
- Keeping info confidential
- Lack of follow-up activities
- Empathy for patients
- Language barriers
- Desire to finish studies
- Re-traumatization
- Continuity of work
- Financial family pressure
- Transportation to work

**NEEDS**
- Present in daily meeting
- Personal/job security
- Help with past trauma
- Trust from patients
- Benefits for family
- First aid course
- Voice heard/appreciated
- More training
- Papers to travel
- Tools to collect data
- Move on to Germany
- Access to MSF systems

**TRENDS**
- More people coming
- Peer counselling
- Group sessions
- Cultural mediation
- Sexual violence
- Closure of borders
- Fewer health providers
- Increased workload
- Importance of internet
- One shot consultation
- Different routes
- Distance follow-up
- Increasing depression

**TECHNOLOGY**
- Video calling
- Biometrics
- Voice messaging
- Social media
- Mapping apps
- Group chatting/sharing
- Group doc editing
- Mobile money
- Smartphone proliferation
- Electronic record access
- Electronic bicycles
- Medical technology apps
Brainstorming, Clustering/Voting Ideas Into Themes

**PATIENT EDUCATION**
- Train HP to train patients to use services and tools
- Send SMS/What’s App messages to patients
- Hold group sessions via video with health providers

**GEO-MAPPING**
- Map geographic hotspots and provide support
- Give feedback on actors response
- Map of actors

**MENTAL HEALTH**
- On-line apps for mental health and self-care
- Physical exercise reduces mental stress

**REMOTE FOLLOW-UP**
- Entering data into apps and sharing it securely
- Call-center hot line
- Send What’s App reminders to patients

**GROUP COLLAB**
- Anonymous group chat with medical support
- Scheduled communication with community
- Personalized messages to be read at a later time

**COMMUNITY NEEDS**
- Patients choose topics electronically for group sessions
- HP collects concerns and feedback from community
- Community members can contribute needs and ideas in a central place

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### “To Be” Journey Map

<table>
<thead>
<tr>
<th>Sharif STEPS</th>
<th>PATIENT ACTIONS</th>
<th>TOUCH POINTS</th>
<th>HEALTH INSTITUTION ACTIONS</th>
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</thead>
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<tr>
<td><strong>Arrival in camp</strong></td>
<td>Registers with authorities</td>
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<td><strong>Notification to HP</strong></td>
</tr>
<tr>
<td><strong>Get medical care</strong></td>
<td>Notifies MSF of past/current diagnoses</td>
<td>Electronic Appointment sent</td>
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<td><strong>Pains</strong></td>
<td>Gets Orientation to system</td>
<td>Electronic reminder setup</td>
<td><strong>Easier service</strong></td>
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<tr>
<td><strong>Gains</strong></td>
<td>Medical appointment</td>
<td>Checkup, meds order tests and educate</td>
<td><strong>Get care and drugs</strong></td>
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<td>Pre-movement Check-up</td>
<td>Longer-term meds provided for travel</td>
<td><strong>More work, language barrier</strong></td>
</tr>
<tr>
<td><strong>Pains</strong></td>
<td>Finds accommodation</td>
<td>HP provides list of accommodations and requests DCC</td>
<td><strong>Easier tracking of new patients</strong></td>
</tr>
<tr>
<td><strong>Gains</strong></td>
<td>Move to Athens</td>
<td>Handoff to Athens is done and e-files are shared</td>
<td><strong>Immediate info, welcome, focus</strong></td>
</tr>
</tbody>
</table>

**PAINS**
- New environment, rules, people and language
- Trust and security
- Waiting time
- New process and meds
- New med appointment
- Another new place, people and services

**GAINS**
- Easier access to care
- Gets care and drugs
- Easier service
- Drugs and info for travel
- Full treatment

**MEDICAL**
- Workload
- More responsibility to follow-up
- Easier to do
- Easier, shared info
Mapping Themes and Selecting a Preferred Solution

Easier Implementation

Low Impact on Patient

High Impact on Patient

Difficult Implementation

- Mapping routes for resources and hot spots
- Social media groups
- Educate patients on services and tools
- Bi-directional communication

“Project Mercury” – remote follow-up w/patients
**Solution Pitch – “Project Mercury”**

**Communication and Collaboration:**
- Upload medical information
- Always available
- Secure Identity protection
- Choose who else has access
- Monitors some vital signs
- Alerts healthcare worker
- Facilitates two-way interaction
- Calendar for planning/scheduling
- SMS conversations
- SMS on health treatment/info
- Info available across health clinics
- Research other health services
Persona Profile: NCD Nurse (Daphne)

Bio: Daphne was born in Athens in a medical family. She studied nursing in a university. After graduating, she has been working in a public hospital in Athens for some years. Daphne joined MSF 1.5 years ago and is currently working in the MSF Day Care Center in Athens. Her responsibility consists of monitoring incoming NCD patients and after consultation with each patient, plan an appointment with an external specialist or follow-up with a treatment. Often a cultural mediator is needed to be present during a consultation to communicate with a patient because of the language barrier.

Age: 35
Sex: F
Country/Region: Greece
Language(s): Greek, English
Profession: Nurse
Location: MSF, DCC, Athens

Goals / Needs:
• Manage large workload
• Access to patient medical history

Challenges / Fears:
• Ability to communicate effectively with patients (language barrier)
• Documents translation
• Previous prescriptions/drugs

Technology Preference

Paper
Digital

August 2019
<table>
<thead>
<tr>
<th>PAINS</th>
<th>NEEDS</th>
<th>TRENDS</th>
<th>TECHNOLOGY</th>
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<tbody>
<tr>
<td>Language</td>
<td>Quality register</td>
<td>Digital identity</td>
<td>Social sensing</td>
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<td>Follow-up with patient</td>
<td>Respectful engagement</td>
<td>GDPR</td>
<td>Computer use</td>
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<td>Work overload</td>
<td>Psychological support</td>
<td>Rise in workload</td>
<td>Telemedicine</td>
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<td>Cultural differences</td>
<td>Complete medical history</td>
<td>Access to information</td>
<td>Chatbot</td>
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<td>Psychological distress</td>
<td>Translation quality</td>
<td>Anti-migrant hostility</td>
<td>Facial recognition</td>
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<td>Gathering patient history</td>
<td>Training</td>
<td>Stereotyping/profiling</td>
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<td>Artificial Intelligence</td>
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<td>Thermal photography</td>
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</tbody>
</table>

August 2019
Brainstorming, Clustering/Voting Ideas Into Themes

**CDM Records in Cloud**
- Digital version of NCD Form
- Cloud-based medical records
- Scan transforms documents into digital record
- AI data ingestion

**Translation Platform**
- AI used to enhance communication and relationships
- Scan and translate documents
- Real-time AI translation
- Real-time mobile app translation between nurse and patient

**Stress Relief Platform**
- Stress recognition application
- AI assisted meditation exercise
- Appropriate staff support

**Health Worker Collaboration**
- Nurse social network for psychological distress and sharing
- Collaborative working with other NGOs and health providers

**Follow-up**
- Automated follow-up remotely
“To Be” Journey Map

**Daphne**

**STEPS**

**PATIENT ACTIONS**

- Visit hospital
- Cross Turkey
- Migrate to Greece
- Lesbos
- Athens
- Migration to Balkans
- Final destination

**TOUCH POINTS**

**HEALTH INSTITUTION ACTIONS**

**PAINS**

- New environment, rules, people and language
- Trust and security
- Waiting time
- New process and meds
- New med appointment
- Another new place, people and services

**GAINS**

- Immediate info, welcome, focus
- Easier access to care
- Gets care and drugs
- Easier service
- Drugs and info for travel
- Full treatment

**PATIENT**

**GAINS**

- Easier tracking of new patients
- Quicker process
- Easier to do

**MEDICAL**

**GAINS**

- Quicker process
- Easier to do

**PAINS**

- More work, language barrier
- Workload
- More responsibility to follow-up
- Workload

**GAINS**

- New environment, rules, people and language
- Trust and security
- Waiting time
- New process and meds
- New med appointment
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**HEALTH INSTITUTION ACTIONS**

- Notification to HP For Welcome
- Electronic Appointment sent
- Electronic reminder setup
- Checkup, meds order tests and educate
- Results sent on to clinic for follow-up
- Longer-term meds provided for travel
- HP provides list of accommodations and requests DCC
- Handoff to Athens is done and e-files are shared

**NEW ENVIRONMENTS**

- Migrate to Greece
- Lesbos
- Athens
- Migration to Balkans
- Final destination

**GAINS**

- New environment, rules, people and language
- Trust and security
- Waiting time
- New process and meds
- New med appointment
- Another new place, people and services

**PAINS**

- More work, language barrier
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**GAINS**

- Quicker process
- Easier to do

**MEDICAL**

**GAINS**

- Quicker process
- Easier to do

**PAINS**

- More work, language barrier
- Workload
- More responsibility to follow-up
- Workload

**GAINS**

- Quicker process
- Easier to do
Mapping Themes and Selecting a Preferred Solution

- “Health Cloud” - Secure Digital Health Record (SDHR)
- Real-time translation/communication
- Automated patient follow-up platform
- Stress relief platform using AI
- Health worker wellness collaboration platform

Daphne
Solution Pitch – “Health Cloud”

Secure Digital Health Record
- Basic, Structured Patient Information
- Data owned by patient
- Application advocated by NGO
- Encrypted, secure, anonymous
- Access controlled by patient
- Cloud-based system
- App on smartphone
- Does not require full-time internet
- Can consume scanned data
- Uses artificial intelligence
- Handles language translation