



HEALTH AND CLIMATE CHANGE

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Using biometric iris technology to real-time health data management in a refugee camp

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Q: The Kenya Red Cross, the Danish Red Cross and Unimed have developed an experiment of a Health Information System (HIS) in Kalobeyei Refugee Settlement.

A: Kalobeyei settlement is served by 2 clinics attending to more than 38,000 patients from the host and refugee community. The settlement grapples with a myriad of health challenges ranging from injuries and sickness. There is high prevalence of acute malnutrition (worsened by cuts in food assistance to refugees and lack of access to micronutrients in diets) and constant disease outbreaks – such as cholera due to poor hygiene resulting from insufficient sanitation facilities. There are also high incidences of non-communicable (diabetes, cancer) and communicable diseases (HIV, Tuberculosis among others)

Q: Are there any climate refugees?

A: No. The refugees in Kalobeyei are mainly refugees uprooted from their countries due to internal conflicts/political instability. However you could argue that climate change worsens and multiplies the vulnerabilities of already fragile populations.

Q: What is this experiment of Health Information System (HIS) in Kalobeyei Refugee Settlement about?

A: The experiment was designed, developed, trained and implemented a health information system at Kalobeyei refugee settlement in Turkana County, Kenya, during the period January-September 2017.

- The objective is to strengthen the existing UNHCR health system and the public health system as KRCS offers health services to both refugees and the local host communities by introducing and assessing the feasibility of biometric identification of patients and electronic health records for better patient management and health system planning. This allows for optimizing an effective management of patients at the health facilities and a quick turn around on health care service provision by the health workers for the benefit of the patients.
- The system went live in September 2017 and since then more 2000 refugees and Kenyan nationals have been registered. The engagement with KRCS field staff shows that the system allows for easier identification and management of patients. Through the support of this information system, field teams are able to focus on response as they have patient records in place, well maintained and accessible, reducing the amount of time previously spent on manual record keeping, hence more effective service delivery.



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Q: What are the current services supported by the system?

A: The current services which are supported by the system are:

- 1) Biometric iris scanning and matching of patients,
- 2) Registration of patients' demographic details,
- 3) triage data such as height, weight, BMI, blood pressure, temperature, respiration rate, waist circumference, hip circumference, MUAC, pulse and SpO2,
- 4) out-patient services such as examinations, ICD10 diagnoses mapped with UNHCR case definitions, follow-up appointments and admissions,
- 5) Processing of laboratory tests and results,
- 6) Pharmacy and drug prescriptions.

Q: How the electronic health records (EHR) supports management for diseases? Can give us some examples

A: • Recording of patients diagnoses which can easily be retrieved for medical history insights. To support the clinicians in diagnosing, the system provides a comprehensive and manageable range of chronic diagnoses.

- Recording of BMI data provides the opportunity for charting so the health care workers can obtain an easy way of understanding if the patient's health (based on weight) is improving.
- Recording of prescriptions provides the ability to see a list of previous prescriptions which enables the health care workers to understand which medication the patient is on.
- Recording of appointments means that the patient can be told when their next appointment is due
- Recording of appointments is displayed in calendar for the clinicians to see which patients are due for a follow-up appointment

Q: What are the specific benefits of biometric iris scanning?

A: The aim was to have biometric identifiers for 90-95% of the clinic population. During the project implementation period, it was noted that the majority of the patients were below 5 years old, with registered Female patients being 1,265 (52.7%) and male registered patients were 1,135 (47.3%). The total Refugee patients registered were 2,187 (90.6%) and total National patients registered were 226 (9.4%). The biometrics iris scanning policy for patient below 10 was adhered to and majority of patient without an iris scan were above 10 years old. The total number of patient above 10 years old with a scan was 1,187 (80.7%) of which 283 did not have a scan (19.3%). The reasons could have been physiological (e.g. blindness), inexperienced user operating the iris scanning device or other factors, However, the project insights is important as it will allow further probing into the 19.3% of patients.



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Q: This is a multistakeholder initiative and relies on a specific partnership. What can we learn from this cooperation?

A: The partnership originated in access2innovation's project "Deciphering the Relief Market" aiming at establishing a Danish innovation platform enabling humanitarian organisations, private sector and academia to collaboratively develop and commercialise solutions to challenges in the humanitarian sector for increased impact.

- Inherent differences in the organisational dynamics between a business organisation and humanitarian organisations impacts priorities and should be recognised and potentially addressed from the outset of a partnership.
- A balance is needed between formalising and keeping partnership collaboration flexible for purpose. During the partnership, the formal milestones must be supported by regular dialogue in and between stakeholders.
- How, when and whom to inform and ensure buy-in from must be clear from the outset of the project. It is recommended to always complete a stakeholder mapping at the outset of a deployment and generally formalise and agree on roles and responsibilities in terms of coordination.
- The partnership has spurred interest in organising innovation processes better in both KRCS and DRC as the complexity of introducing ICT across several departments has been significant.
- It has also been recognised that introducing change involves significant opportunity costs for all concerned unless better structured against a the potential value creation, which could transcend several 'business areas' from quality of healthcare to overall value proposition towards back donors.

Q: What will be the benefits?

- A:**
1. Improving quality of patient management by implementation of a digitalized health information system in Kalobeyei Refugee Settlement
 2. Learning and documenting a multi-stakeholder partnership modality and on adapting new technology
 3. Strengthening the capacities of KRCS staff and volunteers delivering the health services in Kalobeyei.
 4. Advancement and customization of the data analysis for better impact measurement (e.g. service uptake as a result of community campaigns, decrease in patients lost to follow-up, better diagnosis management and adherence to treatment plans, number of ANC visits etc.)
 5. Capacity building and training within data analysis for improved healthcare delivery

Q: Is the security of the refugees insured?

A: The electronic health record ensures that critical data from beneficiaries' visits at the different clinics (outpatient, antenatal care, nutrition, NCD and immunization) such as doctors' notes, medication and lab results is safely and securely saved to ensure continuity of care. The biometric identification ensures that the medical identity of the beneficiary is protected and that doctors can retrieve the correct health record of the beneficiary.