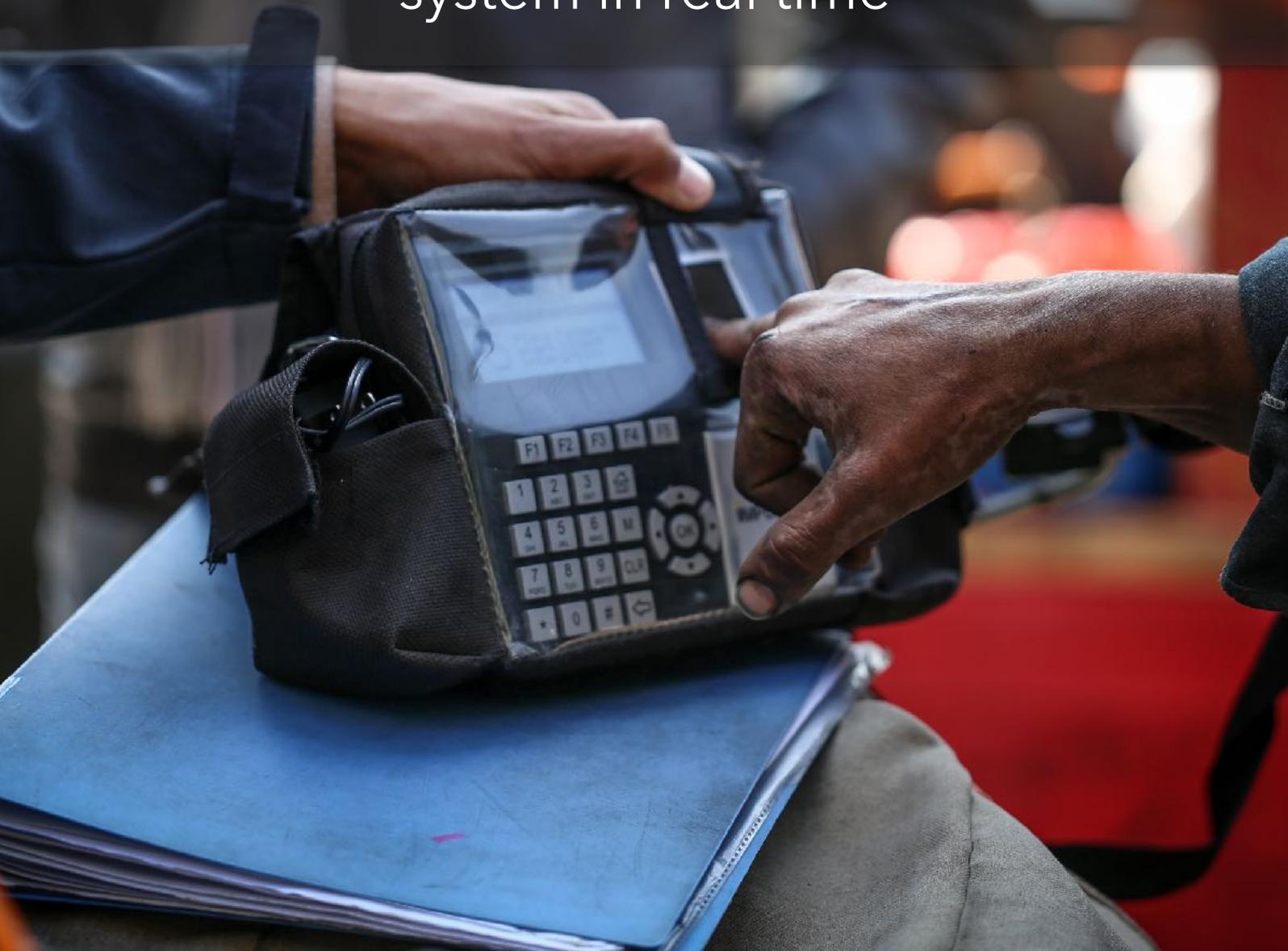


# Progress Report 2016

Biometrics, for client identification and service delivery management information system in real time



An innovative pilot by Nai Zindagi and Mainline

## **Acknowledgements**

Nai Zindagi would like to thank Mainline, under the Bridging the Gaps initiative of the Dutch Ministry of Foreign Affairs and the Global Fund to Fight AIDS, Tuberculosis and Malaria, for supporting the pilot, its continuation and expansion.

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A very special thank to all clients who made this pilot possible.

# Background and Logic

Nai Zindagi Trust is the Principal Recipient of the Global Fund - HIV Grant in Pakistan to prevent, halt and reverse the HIV epidemic among people who inject drugs (PWID), their wives and children in 29 districts across Pakistan.

Services were initiated in 2012 and scaled up to reach approximately 20,000 street based PWID in outreach settings on a regular basis in the last six months (June - December 2016). The main aim of these street based services is to provide: clean syringes/needles to registered PWID; counsel on safer sex practices and provide condoms; provide information related to safer injecting practices, HIV and access to a range of referral services including diagnostics, treatment, care and support.

A sophisticated MIS has been developed in house and improved upon in the last 20 years of service delivery to this population most at risk. The MIS is functional, adaptable and effective in monitoring and evaluation of the quantity and quality of services provided under the GF grant.

In line with new technology developments in biometrics, GSM, WiFi/LAN, GIS mapping, hardware capability etc. we proposed to Mainline in the beginning of 2015 to further improve upon the effectiveness and the efficiency of the current MIS by piloting biometrics based client identification and service delivery management information system in **real time**.

It was proposed and approved to pilot this in 4 districts of two provinces (Punjab and Sind) to assess the efficacy of the system in varied environments urban and semi urban.

The main features that were proposed to be piloted during this period are:

- Registration of existing clients in service delivery on biometrics based identification in order to mitigate and prevent duplication, misreporting and fraud that may be possible in the current system which is manual.
- Discard the need to manually record and later enter service delivery data manually into the MIS, which can lead to errors and may need data cleaning. This system will enable out reach workers to identify clients based on biometrics, deliver and enter services into the machine there and then and with a click of a button upload the data directly into the MIS in real time through the GSM chip embedded in the machine.
- The system will also record and map through GIS, the daily mobility of each out reach worker and pin-point the location where the service was delivered to which client at what time. This will improve monitoring of movement of out reach workers in a given district on a daily basis, support the HR and Administration unit of the PR to record distances travelled for fuel efficiency and also record over a period the various dynamics and changes in the incidence of injecting location wise.



In effect we will be able to compare the difference between the current manual system which has been operational since 2012 and the proposed biometrics based approach to document significant differences and improvements.

As a result of this outcome we will be able to expand the system across Pakistan to other districts with GF support if the results of the proposed pilot match the expectations.

We implemented the biometric based identification and asset (service delivery) management system.

The proposed biometrics devices were carried by outreach workers to potential clients in the field. Already registered clients were identified based on their fingerprints (one out of ten fingers).

Once an outreach workers provided supplies: syringes, condoms, spirit swabs and services: counselling he promptly entered the data in the device on screen through shortcut keys.

As soon as this data is saved it was available on the web server. Location of the outreach worker and client was automatically acquired and at a later phase displayed on a GIS map.

We managed to identify software and hardware firms who provided customised devices instead of android based machines for optimal use and robustness of machines in the field.

- The devices are synced with a centralised on-line front-end application/ software and backend database and it will also has a built-in memory to retain data.
- Devices have ready to use SIM(s) for data processing and uploading in real time and have an employee registration mechanism.
- Real-time and scheduled update of transactional history in centralised database. and backend web monitoring system displays consolidated reports/information from all devices.
- Provided backend monitoring system has capabilities such as user creation, delegation of user rights, users management etc. with multi-user support in backend monitoring system.
- Employee registration on installed biometric devices (are one time only).

The developed application/ software has the following minimum features:

- Able to Import Employee data through Excel file.
- Perform Employee Self Service Login.
- Client Search & Query module.
- Storage of information at the central server maintained by provider.
- Support integrated powerful MIS with minimum following reports:
- Daily Report
- Usability Report
- Machine wise Attendance Report
- User-based access to various attendance reports.
- System is able to support at least 1,000 Concurrent Users within a response time of a fraction of seconds.
- All critical transactions / operations which are being used to delete some records are explicitly confirmed by the user with a prompted dialog box.
- The system maintains proper logs of any changes made in the data. System is implemented in such way that all critical transactions are stored with the logged-in user name that has performed that transaction.
- Application software ensures accuracy and consistency of data in database and reports.

Between May-June 2015 we initiated the process of procurement, tendering, selection and contracting with the most appropriate firm in a software/hardware agreement with a proven track record of quality services, back up on hardware repairs, software and data management/ security.

The selected firm - TERESOL were contracted and also were responsible for training and evolution of the process for the first six months of the pilot.

We selected of 4 districts with an urban and semi urban population and varied client profile to observe and evaluate the efficacy of the systems - hardware, software, data up load, GIS mapping, etc..

The pilot was initiated in the District of Rawalpindi in July followed by Kasur, Dadu and Sanghar in the provinces of Punjab and Sind.

The pilot in Rawalpindi was field tested, errors and glitches removed and rectified and the machines, data up load, data entry etc were fine tuned.

Between August - December 2015 the pilot was expanded to the 3 additional districts.

The biometrics machines were first introduced to the clients for feed back in the AAU which is a residential facility.

Feedback from the clients was encouraging and majority agreed that these machines are required because the ORWs will now have to be on time at the designated sites and will ensure that services are given to the client in reality and not fake service delivery will be recorded.

Rawalpindi was a great learning curve and gave confidence to the teams in registering (pre registered and new clients) on the bio-metrics. There was minimum reluctance from clients to register on the biometric machines.

There was however some reluctance from ORWs as they no knew that their movements, timings and service delivery logs are real and in real time.

Some machines did have hard ware and software problems, however these were addressed during the course of the Rawalpindi pilot.

Once hardware and software were fine tuned and in order, the next set of machines and training of staff was done in the other three districts. By October 2015 all 4 sites were fully operational on biometrics.

A web portal was developed to monitor daily services and movement of service delivery (ORWs - Clients) in real time.

In each district 4-5 machines (including the back up machine) were deployed and on going software and hardware back was assured.

From March 2016 the SLA (software and data maintenance) costs were taken over by the Global Fund in the 4 districts.

In all four sites approximately 95-97% of services were provided on biometrics, as in some cases finger prints were not recognised by the machines.

By the end of 2015 approximately 1546 PWID in the 4 districts

# Biometrics in 2016

The primary focus of the 6 month pilot in 2015, was to record all NSEP (Needle Syringe Exchange Program) services through biometrics after tailoring the hardware and software. The services piloted were:

- Client registration
- Daily NSEP and ancillary services including BCC, condoms, counselling, referrals
- Daily attendance and mobility of out reach workers
- Attendance of Field supervisors, paramedic and site manager

The Nai Zindagi - GF roll out is based on a continuum of prevention and care model. It was proposed to Mainline to further explore the possibility of adding the following service delivery components to biometrics:

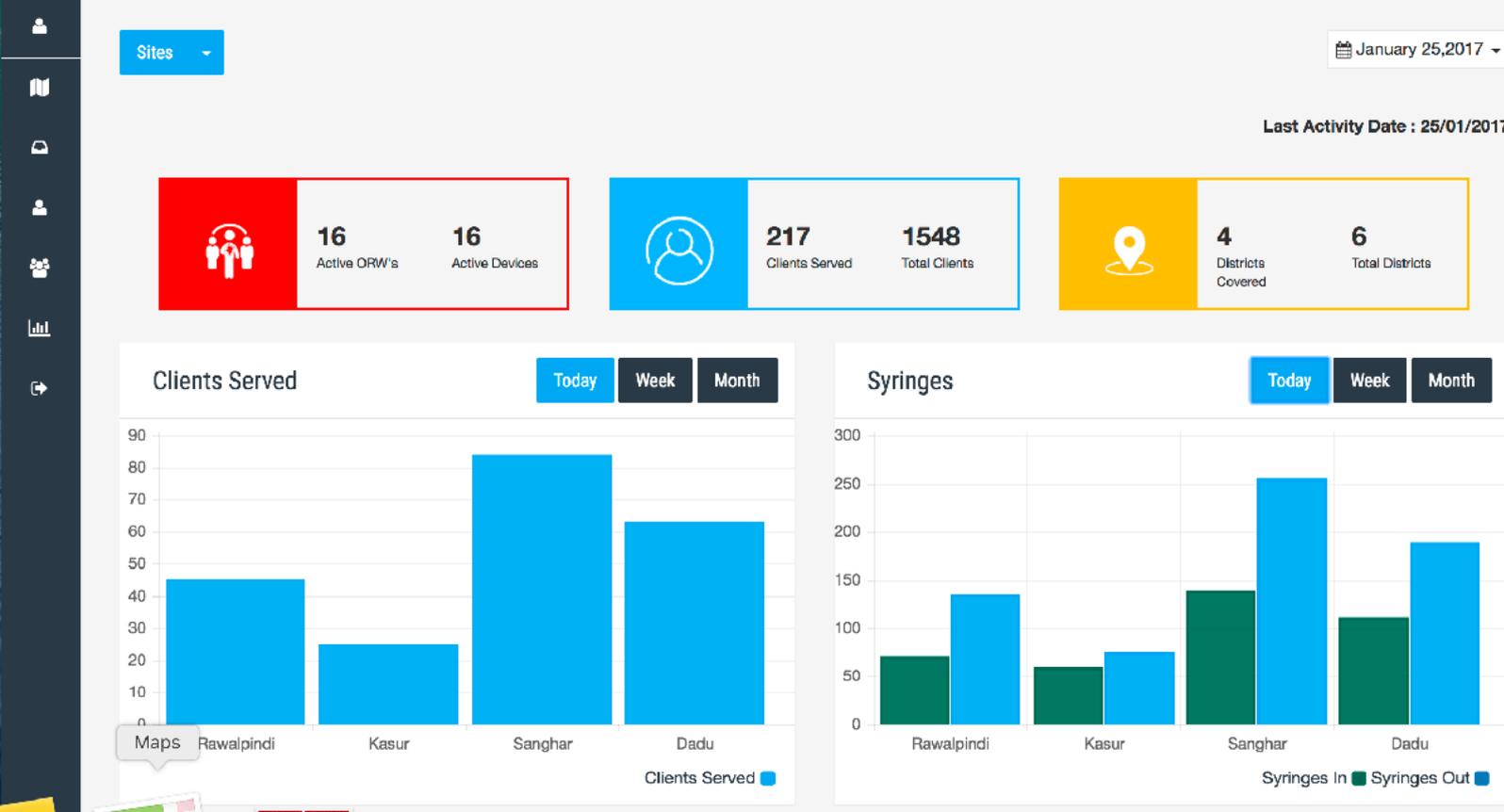
- HTC module for PWID
- Spouse registration, HTC and service delivery
- Attendance and mobility of HTC counsellors and Female out reach workers
- Services provided by the Social Mobilisers
- AAU unit module to record attendance and monitor ARV roll out

## **Development of the Modules and software**

An agreement was signed with Teresol in April 2016

The NZC and NZT teams together with the Tersol team developed the following modules:

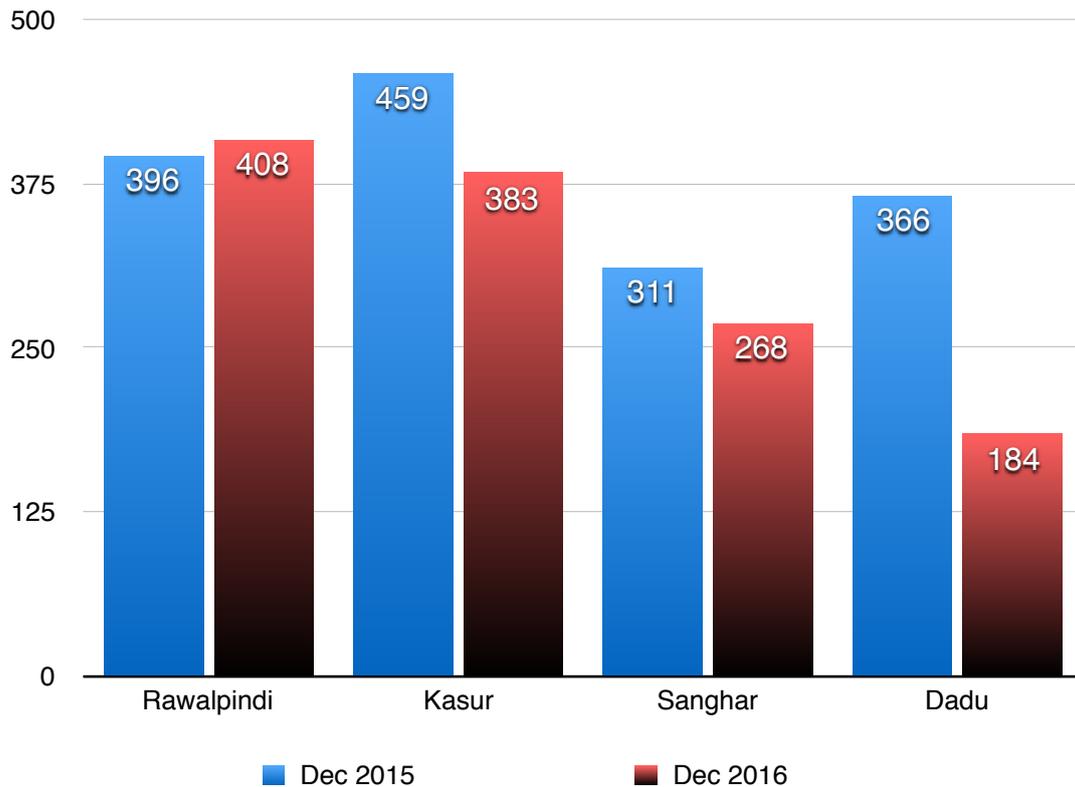
- HIV Testing and Counselling Module for PWID and spouses
- Social Mobilisers Module
- Female Out reach Workers Module
- AAU Module
- Uploading of software of the modules including NSEP module on to the new biometric machines
- Training of NZ staff in operating the machines
- Initiation of trials in Rawalpindi to fine tune software



- **Portal:** A new portal for the services being provided after the development of the new model was developed, fine tuned and made operational.
- **SOPs:** A manual for standard operating procedures has been developed for staff using the biometrics. The SOPs are available on request.
- **Training:** A training module to train staff in the optimum use of the biometrics machines has been developed. The training presentation is available on request.



# Outcomes - 2016



- NSEP Services in Dadu fell from 366 to 184 distinct clients in the respective months of December 2015 and December 2016. Dadu is a site managed by one of the sub-recipients and has been under observation of over reporting and fake registrations. The contacts came down by 66%.
- NSEP Services in Kasur and Sanghar (both managed by sub-recipients) reduced by 27% and 10% respectively. In Rawalpindi the site managed by Nai Zindagi services increased by 7%.
- One obvious outcome is that with biometrics it is quite difficult to continue over or fake reporting.
- Probably a similar trend will be observed in the new modules of HTC, social mobilisers, female outreach worker, etc. now incorporated under the new contract with Mainline in 2016. As the modules have only been in place a few months it's too early to comment.
- The development and integration of the new modules took longer than anticipated as the service delivery is quite complex and the nodes where data is to be collected and reported are quite a few. However with consistent back up from TERESOL and Nai Zindagi PR staff it was fine tuned, glitches rectified and final outcomes achieved.

# Comments

- PWID are not reluctant to accept biometrics in service delivery. It is however essential to properly brief them of its importance and how it improves monitoring to ensure quality services.
- There was at some level reluctance by out reach workers and some management staff at some sites. The primary reason being that their movement was now monitored in real time by the biometrics monitoring team at the PR office and the fact that fake service delivery and mis reporting were now not possible.
- TERESOL is a local firm providing hardware and software back up. The machines are operating under extreme conditions (heat, dust, rain) and off and on need repairs or adjustments. Having a local hardware firm makes replacement of parts and maintenance easy. Also having a back up machine for every five in the field is essential.
- The Office of the Inspector General of the Global Fund has strongly recommended the introduction of the biometrics machines in all districts of the Global Fund funded Nai Zindagi grant. We are initiating biometrics with the new modules with 60 machines in the city of Karachi.
- Once adequate data is uploaded, we intend to give out “guest or visitor” status to those interested to see realtime service delivery on the portal.
- Its a very cost efficient way of monitoring and evaluating services in real time.



# Recommendations

- Biometrics to record, monitor and evaluate services for Key Populations is possible provided the clients are taken into confidence and confidentiality of personal information is assured and guaranteed by the service provider.
- Nai Zindagi now has approximately two years of working with biometrics technology under extremely adverse and severe street based conditions. Consistent feed back provided to the hardware and software firm hired has resulted in modifications in the hardware for robustness and efficiency. We are in a position to now take this technology to other key populations in other countries. Already the Government operated ART clinics are looking into possibility of installing biometrics and synchronising with our data, particularly to monitor adherence.
- Biometric based real time monitoring and evaluation should be promoted for efficient use of grants, human resource and timely service delivery.

