DATA OPTIMISATION TOOLKIT

Developed by MSI Reproductive Choices

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MSI
REPRODUCTIVE CHOICES

Contents

Acronym List

CEI   Client Exit Interview

CLIC   Client Information Centre

CP   Country Programme

EHR   Electronic Health Records

GSO   Global Support Office

M&E   Monitoring & Evaluation

MPI   Multi-dimensional Poverty Index

SLT   Senior Leadership Team

TOT   Training of Trainers

1. Introduction

1.1 Purpose of this Toolkit

Collecting relevant, high-quality data is essential for evidence-based programming. As demand for data grows, it is increasingly important to design systems that provide actionable insights without creating additional question-burden for providers or clients. MSI Reproductive Choices has designed, tested, and scaled an approach to optimising routine data capture - maximising the amount of information that can be captured to strengthen programming in real time. This approach enables better understanding of clients and facilitates rapid course correction, ultimately maximising impact.

This toolkit shares MSI's experience to support sector partners to strengthen and optimise data capture in their own data systems. By documenting this process, we aim to introduce others to data optimisation, from initial design to full-scale implementation, whilst sharing insights that can inform and inspire other organisations seeking to improve their data capture infrastructure. The toolkit begins with a comprehensive background to the project, situating the CLIC system within MSI's data architecture and broader monitoring, evaluation and learning processes. Section two outlines the process of how the model was conceptualised, built, tested, and scaled - highlighting both strategic choices and practical considerations encountered along the way. The structure of this section introduces each stage of the process with an overview of the process and success factors, before detailing MSI's approach. The toolkit concludes with key insights on lessons learned and the vision for how the data optimisation approach will transform MSI's ability to translate evidence into impact.

This toolkit is designed for development partners who are seeking to enhance and streamline data capture in their systems. It is particularly suited for teams with a technical background in management information systems.

1.2 Background to the Data Optimisation Project

MSI is at its core a service delivery organisation, ensuring reproductive choice is available for all. MSI operates through different models of service delivery (mobile outreach teams, MSI's clinics and working with the public sector as examples). Different service delivery channels have different needs, and we use different tools for data capture, ranging from EHR - our fully digital medical health record solution for larger centres and maternities - to the simple mobile phone application used by our community-based nurses. Where we work with the public sector, all client data is captured in public health records, and we rely only on monthly aggregated summaries for our reporting. Our Mobile Outreach channel, where teams travel to a variety of sites in remote communities, is where MSI sees the largest footfall of clients. Most of our outreach-providing country programmes utilise our CLIC-system for data collection. The CLIC system is a client registration system used to capture basic client details, services and payments. CLIC was developed in-house, and is a laptop-based solution designed to work offline to enable digital registration of clients in remote settings. Since the CLIC system is owned and managed by MSI, it provided greater flexibility to explore and experiment with its functionality. Data optimisation was developed to address the challenge our mobile outreach teams experience daily, where they serve large numbers of clients and spend significant amounts of time collecting the information we as an organisation rely on to be able to understand our clients, communicate our impact and improve on our work.

MSI also collects a significant amount of data on an annual basis using Client Exit Interviews (CEI). The CEI survey is designed by MSI and organised as an annual survey where a range of questions are asked to clients opting in to participate after receiving a service. Every year we interview between 12,000 and 18,000 clients across our service delivery channels. While CEIs have been invaluable in understanding our clients and their experiences, they are costly, resource-intensive and limited to annual, aggregated insights by channel. We saw that data optimisation would enable us to integrate key questions—such as indicators aligned with the Multi-dimensional Poverty Index (MPI)—into routine data collection. This would allow MSI to measure equity with far greater granularity, both over time and across locations, while also offering a more cost-efficient way to ensure we are reaching the poorest clients. Integrating core elements of the CEI surveys into routine data collection in the mobile outreach channel would enable MSI to reduce the frequency of standalone CEI exercises in this channel and potentially phase them out over time, generating an estimated USD 750,000 in annual savings from CEI implementation alone.

To optimise routine data capture, MSI sought to pilot an innovative approach by adapting the CLIC system to randomly rotate through and present only a sub-set of demographic and client-relevant questions to a client, rather than presenting all questions to all clients during registration. The goals of the CLIC data optimisation project were:

1. **Provide timely data:** Support continuous monitoring and rapid insights
2. **Enable adaptive programming:** Facilitate quick course-correction, improve decision-making speed, test and iterate approaches
3. **Enhance client and staff experience:** Shorten registration, reduce waiting times, and improve client and staff satisfaction
4. **Increase data breadth:** Collect more diverse data without extending registration time
5. **Reduce question burden:** Ask fewer demographic questions per client

2. Developing, Testing, and Scaling the Model

2.1 Defining the Concept

Step 1: Define Your Concept

How to do it:

1. **Identify Mandatory Questions that you need to ask from everyone**
   – Keep essential fields fixed (e.g., Name, Age, Contact details).

2. **Select Questions for Rotation.**
   – These are questions that you do not need to know for every single client, but you want to know for your client-base (e.g. Level of education of the clients you serve)

3. **Apply Randomisation Logic**
   – Configure your system to display different questions for each client visit.
   – Example: Every client is asked mandatory questions + 2 random demographic questions + 2 random MPI questions.

4. **Group Questions if needed**
   – Create rotation sets if there are questions that need to be asked together

5. **Plan for Full Question Sets for surveys**
   – To validate survey estimates, ask the full survey set for every x-th client.

Tips:

- Ensure rotation of questions allow cross-tabulation for analysis later (e.g. it's not always the same questions appearing together).
- Use simulations to check that your rotation design will achieve the desired precision (e.g., <10% margin of error) within your expected client volume.

MSI's goal was to collect poverty-related and wider-insight data routinely, without creating additional client-registration burden. The concept we explored was to identify questions that could suitably be placed on rotation – e.g. not be asked to every client and implement this question rotation functionality in our routine data capture system. With the new setup, clients would not be asked a fixed set of questions every time, but rather a varying combination of questions as triggered by the system's randomisation setup.

To set this up we started with reviewing and rationalising the questions we wanted to explore. We reviewed and reduced the number of mandatory questions in the system, ensuring we were keeping only essential questions like Name, Age, Phone number and Agree contact. We applied the rotation approach to existing demographic questions such as Marital status and Level of education so that going forward we'd ask only 2 randomly selected questions rather than 5-8 (country dependent) for each client. We added select questions from the CEI Surveys in rotation, asking only 2 randomly selected questions to each client. The random selection (e.g. varying combinations) of demographic and CEI questions would ensure that we would be able to cross-tabulate between all questions asked. Finally, we added rotating groups of questions for multi-dimensional poverty.

Since full indices like the Multi-dimensional Poverty Indexes (MPI) require at least 10 questions to be asked, and for some relationship between types of questions to be maintained, we did extensive analysis and simulations to identify logical question groupings. The MPI rotation design would present smaller groups of 1–3 questions together, and present two of these groups for each client. When enough combinations are collected / enough clients are registered, we modelled that it will be possible to estimate relative poverty levels at individual service delivery points - enabling granular, high-frequency insights (e.g., identifying sites serving relatively poorer clients) while maintaining client-registration efficiency. With our high client base, we concluded it would be possible to estimate a relative poverty level for a site with only one or two site visits. In addition, to estimate MPI values at the client level, every 50th client is asked the full set of MPI questions.

To test the data Optimisation approach, we piloted the changes with two outreach teams in Nigeria to identify what works well and what needs improvement, and to use these lessons to refine the system before implementing it to other country programmes.

Flow of clients / questions at service delivery site
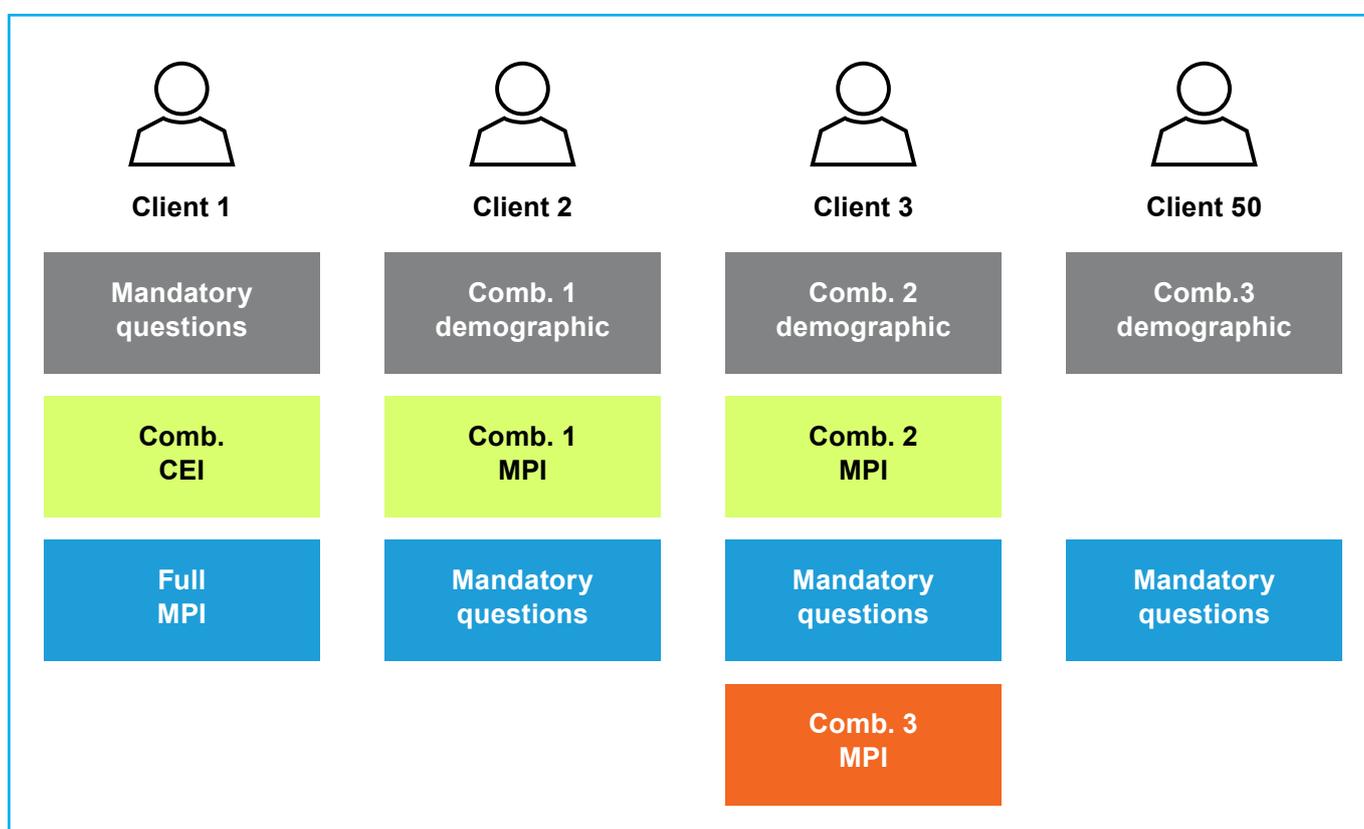
2.2 Pilot Implementation

Step 2: Piloting the approach

How to do it:

1. Select Pilot Teams

- Choose a location with sufficient client flow for robust data.
- Ensure teams have reliable power / power backup.

2. Configure the System

- Implement rotation logic for questions / question groups.
- Set sampling rules by asking full question sets periodically to validate estimates
  (e.g., CEI questions for ~33% of visits; full MPI set for every 50th client).

3. Train Users

- Cover technical changes (how questions appear on screen and rotate).
- Include role-play for introducing new questions respectfully and explain how the data will improve services.

4. Monitor During Pilot

- Track registration time and client flow.
- Collect staff and client feedback on experience.
- Validate data quality (compare margins of error to baseline surveys).

Tips:

- Start with a 3–6 month pilot to gather enough data for precision checks and operational insights.

Checklist for Success

- Staff trained on technical and communication aspects.
- Rotation logic tested and functioning.
- Feedback loop established for troubleshooting.
- Data quality checks scheduled weekly.

The pilot in Nigeria tested feasibility, practicality, functionality, data quality, benefits, and challenges of using the randomised question approach. Two outreach teams received training on the system changes where the questions appearing on the screen would change for each client, and training on how to ask the new questions that were added into the system. As an example, the MPI question set was framed in the training as 'Living Condition questions' rather than 'poverty questions' as this reflected a more respectful way of introducing the questions to clients.

The pilot focused on three learning areas:

1. Frontline staff experience, training needs, and client flow impacts

2. Client perceptions, satisfaction, and consent management

3. Broader insights on data quality, visualisation, usability, and programme value

The pilot was run for 5 months. The key findings of the pilot were:

- **Faster client registration:** Reduced from 5 minutes to 2.5 minutes due to fewer total questions asked.

- **Higher client and staff satisfaction:** Shorter waiting times were the primary driver for this. Staff noted the importance of explaining to clients why new questions were being asked, and how the data would be used.

- **Enhanced insights:** Improved accuracy and data breadth of the new questions added (Poverty and CEIs) supported faster, more reliable decisions.

- **Improved precision:** Within 1.5 months, data cross-tabulations between questions from different rotation groups achieved a margin of error between 5.5–8.6%. This represents an improvement from the margin of error achieved by the annual client exit interview survey, which is 10%.

Example of client card section displaying mandatory and randomised demographic questions

See Appendix 1 for screen shots of full client card with all randomised sections.

2.3 Technical Refinement

Whilst a lot of work was done up front to ensure the setup in the CLIC system was accurate, we found that we needed to make several refinements post-pilot, to enhance randomisation and flexibility, which are outlined below.

2.3.1 Functionality Development

Data entry in the CLIC system works with several forms displayed to users. They work the following way:

- Global or locally customised form configuration determines attributes to display. 'Global' configuration settings are general and apply to all country programmes. 'Local' configuration settings apply to a specific country programme and override Global settings. All 'Local' configuration options are mapped to 'Global' options where relevant.

- Rules can be created with predefined logic and are assigned to forms. Examples of rules in the system include "Generate a warning when a client receiving an FP service has age given of less than x" to "Display a popup to enter the Reason for Removal when a FP Removal service is provided".

Key functional requirements implemented for data optimisation were as follows:

1. *Demographic Attribute Randomisation:* Each client visit displays two randomised questions in a form from a pre-defined pool on the client registration page. This was set up in the system by creating:

   - Groups of demographic questions
   - A setting to determine the number of questions to randomly select and display from the list when the form is triggered (e.g. a form is created in the configuration portal with ten attributes in total, where you can set the number of random attributes to display. If set to two, the form displayed to users will randomly show only two attributes (with equal weighting across all attributes)
   - Frequency of questions generation (e.g. 100% of the time = two questions randomly displayed from the list for every single client).

Screen shot of Configuration Portal Demographics form with four attributes, and setting to display two of these

Screen shot of rule determining that the Demographics form should be triggered for 100% of clients

2. *CEI Sampling Logic:* Randomly appears for ~33% of visits, showing two random questions. By analysing our Mobile Outreach teams' client flow (1300 clients/month/team as a conservative estimate) we determined that it would be sufficient to ask CEI questions for 1/3 of the client visits. This is set up with a "Percentage" comparator in the rule definition to determine the % of visits where the form is triggered (e.g. setting a 33% chance for the CEI form to display, means it will display for roughly 1/3 of the visits). The question randomisation works identically to the Demographic Attribute Randomisation to display two questions.

Screen shot of Configuration Portal CEI form with six attributes, and setting to display two of these

Screen shot of rule determining that the CEI form should be triggered for 33% of visits

3. *MPI Sampling Logic:* Two random question sets per visit, and full MPI[1] set for every 50th client. Through analysis of the pilot data we found that some MPI questions always need to be displayed together to make sense (e.g. questions on materials used on floor/walls/ceiling of their home always need to be asked together), and that these groups need to be randomly combined with other groups to enable complete analysis. As a result, we created groups of questions as forms and set the system up so those two MPI groups (forms) would appear randomly for each client. Using the same client flow analysis we used for the CEI rotation, we determined that we'd need to display the full MPI question set to every 50th client to underpin the MPI randomised question samples. See 2.3.2 and Appendix 2 for more detail.

Screen shot of Configuration Portal MPI (Section 3) form with three attributes, and setting to display all of these

Screen shot of rule determining when the MPI (Section 3) form should display, using the combined logic of "RANDOM_GROUP" and "Percentage", to randomly select two MPI sections from the pool of potential MPI Sections to trigger, and only if the visit is NOT the 50th visit

See Appendix 2 for more detail.

[1] Note that the MPI question relating to nutrition was excluded as an earlier pilot with our annual CEI surveys demonstrated that making physical measures of clients did not reach acceptability among our clients.

2.3.2 Ability to hide/display forms every x number of visits.

Determining whether a client lives in multi-dimensional poverty or not requires having answers for the full MPI questionnaire for that client. Thus, while asking two MPI question groups to every client allows for crosstabulation of such MPI questions with other indicators, we cannot cross tabulate between multi-dimensional poverty status and other indicators at the client level, which restricts the unit of analysis to sites visited. Thus, to overcome this and estimate MPI values at the client level, asking the full MPI questionnaire to some clients was required. This was added as a refinement for the MPI after the initial pilot, where we decided to display the full set of MPI questions every 50th visit. For this, we introduced a new "Dependency" comparator. This enabled rules to depend on the results of another rule to only check commonly used rules once (e.g. checking if this is the 50th client), reducing processing required in the app as well as facilitating maintenance of the rules (a change of this rule would only be made in one place). The dependency rules will be checked first so that it can skip checking conditions on other rules if we know they would be inactive due to their dependency being false. As an example, to ensure users are never shown the two randomised MPI forms and the full set of MPI questions, the rules for the two randomised MPI forms have a dependency to check that it is not the 50th visit before the rule to display the two forms is triggered.

2.4 Implementation and Rollout

2.4.1 Step-by-step rollout

Step 4: Implement and Roll Out the System

How to Implement

1. **Ensure your system and data collection is suitable for data optimisation**
- This process may not work if you are expected to merge your client-level data with other systems / partners and data for every client is required. It may also not work if client flow is too low or reporting periods too short to achieve the desired precision.

2. **Secure leadership buy-in**
- Brief senior stakeholders on the purpose and benefits of making a data optimisation change to your system.
- Align on which questions to keep mandatory and which to rotate, and implications of this for your data.

3. **Configure the system**
- Apply agreed question sets and rotation logic.
- Test configuration before deployment to avoid errors.

4. **Train users**
- Use a Training of Trainers approach for scalability. This could be done remotely as well as in person.
- Combine technical training (system changes) with practical skills (introducing new questions appropriately).
- Include role-play and scenario-based exercises to build confidence.

5. **Go live**
- Deploy changes to selected teams or regions first.
- Provide on-the-job support during initial weeks.

Checklist for rollout
- Leadership approval secured.
- Question sets reviewed and agreed.
- System configuration tested.
- Training completed for all relevant staff.
- Support plan in place for troubleshooting.

The CLIC system has been used for several years across 20 MSI Country Programmes in Africa and Asia. Roll-out of Data Optimisation to Mobile Outreach teams in these Country Programmes entailed the roll-out of new functionality within their existing data capture system. As such, roll-out of data optimisation was relatively low effort on the ground. The main work in terms of Country Programme roll-out was:

1. Analysis and selection of questions for the Country Programme, determining which to keep as mandatory, and which to place on rotation, as well as which questions from the CEI would provide the most insight for the Country Programme. Country Programme stakeholders selected which questions to maintain as fixed and which to place in rotation based on clinical and operational requirements as well as government and donor reporting obligations (see table below, and illustration of a comprehensive question list in Appendix 3).

Country	Q1: Sex (mandatory question)	Q2: Number of living children	Q3: Marital status	Q4: Marketing (Last 3 months)
Ethiopia	Fixed	Fixed	Rotated	Rotated
Mali	Fixed	Rotated	Rotated	Rotated
Nigeria	Fixed	Fixed	Fixed	Rotated
Senegal	Fixed	Rotated	Not asked	Rotated

2. Training staff on the new system behaviour and on how to ask the new questions. Training was conducted as a remote Training of Trainers (ToT) session training master trainers within the Country programme. Following Global Support Office-led ToT, Country Programme M&E, Outreach operational leads and Service delivery teams received full-day CLIC training combining platform usage for data collection with scenario-based practice. Training addressed both the technical set-up of rotating questions during client registration as well as practical experience through role-play exercises to strengthen communication skills - enabling teams to explain the questions, address client concerns, and ensure client comfort. Once the system had gone live, GSO IT provided technical system support, while the Evidence & Impact team supported data analysis.

Implementation and Rollout Process Example: Senegal
- Introduction call on Data Optimisation with Country Programme (CP) Senior Leadership Team (SLT)
- CP and Global Support Office (GSO) Evidence teams analyse and review questions in CLIC system
- SLT sign off questions to use going forward (remove questions no longer needed, agree demographic questions to place in rotation, agree CEI questions relevant for CP)
- GSO-led Training of Trainers in CP: 1/2 day remote training covering systems change, new questions and how to support staff to implement.
- CP team train mobile outreach teams in person, including role play building confidence to ask new questions.
- Mobile outreach team go live with Data Optimisation system changes, receiving ongoing follow up from Country Support Office
- Regular data quality checks and feedback loop to ensure quality data capture

3. Outcomes of data optimisation

3.1 Increased data collection efficiency

In the Country Programmes that previously asked a higher number of questions to each client who amended their setup to fully leverage data optimisation functionality, the data optimisation has demonstrated both:

1. *Increase in range* of questions asked in a day to Mobile Outreach clients, increasing the ability to generate wider and more valuable insights
2. *Decrease in number* of questions asked to majority of individual clients, improving waiting times and satisfaction

As an illustration, a mobile outreach team serving 20 clients in a day could complete 300 registration questions daily (15 questions x 20 clients), generating possible insights from 15 questions in total. With full data optimisation implemented in this example (eight demographic questions moved from fixed to rotating; eight new CEI questions placed in rotation; and new MPI survey in rotation), the mobile outreach team would ask approximately 290 questions in one day (10 questions less), but generating possible insights from 37 questions in total (19 questions more). See example of full Data Optimisation question sets in Appendix 3.

It is worth noting that if a Country Programme collected fewer questions suitable for rotation to begin with, they would see less (or no) decrease in the total number of questions asked when additional insight questions were added.

3.2 Improved data precision

Rotation functionality was validated through probability checks comparing expected vs. observed frequencies using one-sample proportion z-tests. The expected probability varies by rotation group and by country programme as the number of questions in each rotation group will be different. Once data cleaning was completed, proportion estimates were obtained for rotation questions both in isolation and cross-tabulated with either fixed or rotated questions.

For example, in Mali each demographic rotation question was asked to 40% of clients (~570 times/month). Margins of error dropped from 4.4% to 2.9% after two months - meaning that in one month, there was greater precision for each team than the CEI has for the whole service delivery channel annually.

3.3 Data-driven programming

The CLIC dataset enables the generation of actionable insights across key programme performance and equity indicators. Illustrative examples include scale under split outreach models, equity reach, and community vulnerability and norms.

Productivity and Split Outreach Models

In several country programmes, outreach teams operate split models, whereby teams divide into two or three sub-teams during the day by partnering with government facilities and adding locum clinical providers. This allows services to be delivered simultaneously in multiple locations.

CLIC analysis demonstrated that across the partnership:

- Just over **50% of outreach days are split days**, with significant variation by country.
- In **Tanzania**, teams operate split models on approximately **90% of outreach days**.
- On split days, outreach teams serve **2.4 times more clients per shift** compared to non-split days.
- This increased reach comes at a cost of **less than USD 6 per additional person reached**.
- Importantly, there are **no observed differences in client demographics or equity indicators** between split and non-split days.

This approach was initially piloted in two countries and has since been adopted by the majority of country programmes, with local adaptations to suit context-specific needs. These findings demonstrate that split outreach models offer a highly cost-effective way to expand reach without compromising equity, can be safely scaled across diverse contexts, and provide a strong evidence base for peer learning, with country programmes adapting the model based on local capacity and partnerships.

Equity and Poverty Reach

Equity - particularly reaching clients living in poverty - is a core priority for MSI. Analysis of CLIC data from Burkina Faso shows that 63.7% of clients were living in severe poverty, significantly higher than the national benchmark. A key insight from the analysis is the comparison between urban and rural outreach sites, which is particularly valuable given the limited availability of reliable data on urban poor populations, including those living in informal settlements and slums. Notably, urban outreach was very well targeted, with poverty levels among urban clients nearly identical to those in rural areas (62.2% vs. 64.7%).

These findings generated by CLIC are important because they validate the effectiveness of MSI's targeting strategies in both urban and rural settings, and strengthen MSI's ability to demonstrate equity impact using client-level data where external data sources are limited.

Community Context and Vulnerability Indicators

Two additional indicators - displacement status and community narratives around contraception - provide important context for understanding barriers to access and uptake. CLIC data showed that in the DRC, 21.1% of outreach clients reported having experienced displacement, highlighting the high vulnerability of populations reached through outreach services. In Nigeria, 7.9% of outreach clients reported that they disagree or strongly disagree that they hear positive stories about contraception in their community, indicating that negative or ambivalent community narratives persist for a subset of clients.

Adolescent and Adult Comparison

For both displacement status and community narratives, CLIC data showed that there were no significant differences between adolescents and adults. This suggests that vulnerability and perceptions around contraception are shaped largely by community-level factors, rather than age alone. This suggests that MSI's outreach models must remain flexible and responsive in fragile and humanitarian contexts, continued investment in community engagement and social and behaviour change communication (SBCC) is critical, and messaging and engagement strategies can be broadly aligned across age groups, as community norms affect adolescents and adults in similar ways.

4. Lessons Learned

The rollout of CLIC provided key insights across training, implementation, and operational design. These lessons highlight the importance of balancing data quality, efficiency, and client experience when optimising systems for routine data collection, as follows:

1. **Maximise rotation and manage registration time:**

Adding rotating insight-questions without shifting existing questions into rotation negatively impacted client registration time. We found that applying rotation for all suitable existing questions was essential to minimise or eliminate any negative impact of adding additional insight-questions, supporting higher client and staff satisfaction.

2. **Build confidence in data analysis of 'rotated data':**

Stakeholders unfamiliar with statistical concepts initially doubted the reliability of rotated question estimates, resulting in reluctance to move questions from 'fixed' to 'rotating'. Demonstrating how proportion estimation works before reviews of which questions to move into rotation helped build confidence and buy-in.

3. **Invest in comprehensive training for data collectors:**

While the CLIC system changes were easy and intuitive, training focused on effective question delivery, how to manage client resistance, and maintaining smooth registration during high volume. Role-play and scenario-based sessions helped build confidence and communication skills. We found it was important for the training to frame the questions sensitively (e.g. speak of "living conditions" rather than "poverty") and explain the purpose for asking these different types of questions, for staff to be confident and help maintain client trust.

4. **Ensure on-the-job support to data collectors:**

Training must be ongoing, with regular refresher trainings to ensure staff understanding of system and questions stays accurate. We have found that knowledge drifts over time, and concepts must be reinforced to avoid divergence in interpretation and understanding as this negatively affects data quality. Additionally, while the CLIC system supports system translation, locally translated job aids (e.g., visuals) supported consistent delivery of non-service questions.
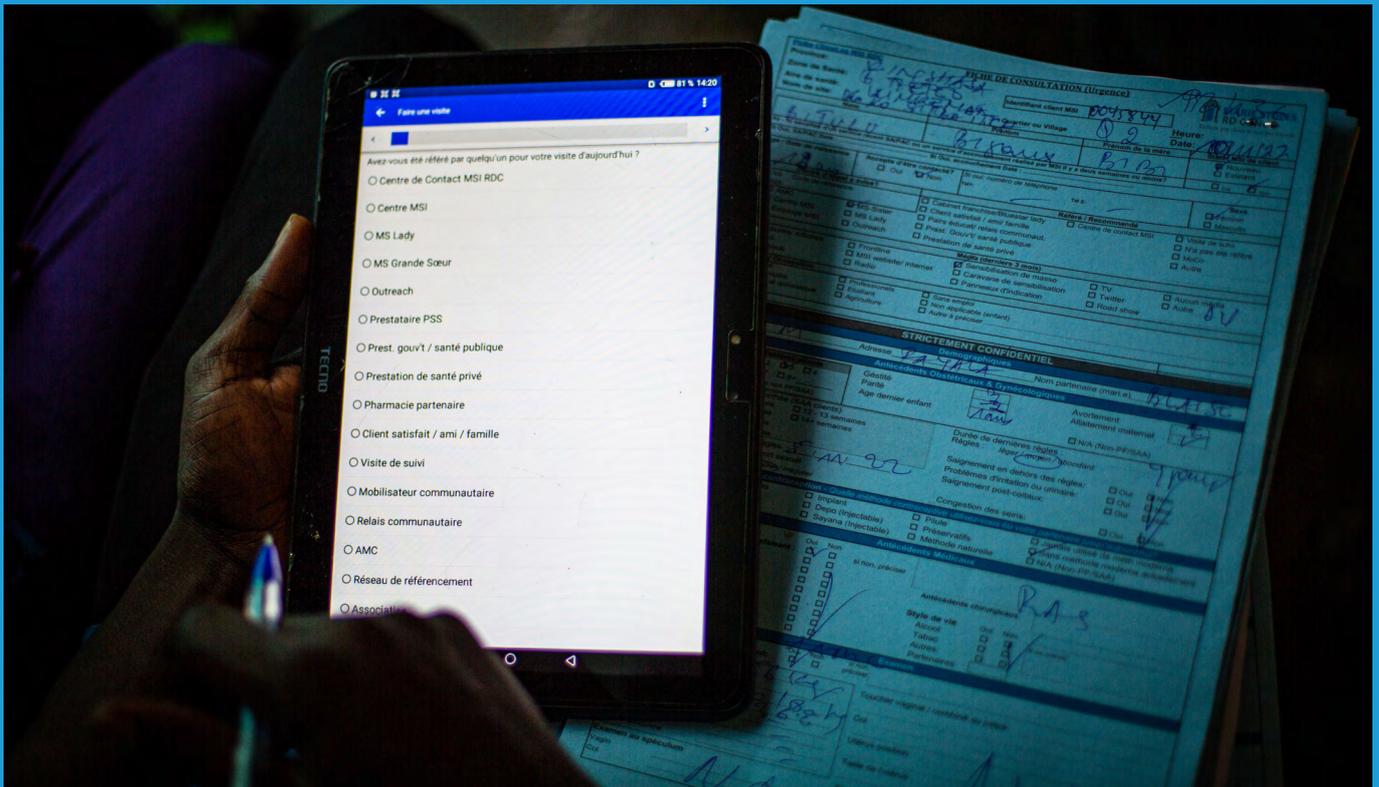
5. **If working in contexts with unreliable electricity, embed logistics for continuous power back-up:**

Rotating questions must be completed 'live', requiring logistical plans that ensure reliable power and workflow continuity for laptops, which can be a challenge in rural settings. Planning must factor in spare batteries, portable generators, and/or adjusted team composition in high-volume locations. Rotating questions not completed together with the client will be completed after the event, with the response option "Not recorded live".

6. **There may be potential to streamline data entry:**

In rural Ethiopia, shared household characteristics for the populations served suggest potential to set 'default' response options in the system for these questions to speed up data entry and increase staff satisfaction. Any such adjustments will be based on analysis of at least three months of data to ensure quality and comparability.

7. **Data Optimisation may only be suitable in some contexts:**

e.g. in systems where demographic and insight data is not shared with / merged into other systems at the client level, as this will lead to gaps in the merged data from your rotated data fields. Data optimisation may also not be suitable for data fields or data systems where reporting needs to be done frequently (weekly/monthly) as sufficient sample sizes are necessary to achieve statistical precision.

8. **Build a cross-functional team:**

Putting together a cross-functional team to deliver this change was essential. Skills required included expertise in evidence, monitoring and evaluation, systems design, development and testing, client experience, change management and implementation.

5. Vision and Next Steps

Data Optimisation has been rolled out to 15 countries (200+ teams) as a core tool for rapid, evidence-based decision-making, seamlessly integrating into routine workflows and equipping teams with real-time insights. This enables teams to adapt and learn from interventions without relying on lengthy and expensive research.

Our next step is to continuously monitor performance and data quality. Data Optimisation in the CLIC system will enable near real-time measurement of intervention impact and cost-effectiveness - for example, if we launch a new demand generation technique in a region in Zambia, we can quickly assess its effect. The CLIC system is on the roadmap from integration into the MSI's Global Data Warehouse, from which interactive dashboards will be developed to visualise key insights in a dynamic, user-friendly format. This evidence-driven approach will support strategy refinement, resource optimisation, and stronger programming decisions - replacing assumptions with actionable data.

Appendices

Appendix 1: Client card

Screen shot of Client Card section displaying form with Mandatory data fields and form with randomised demographic attributes

Screen shot of Client Card section displaying two randomised MPI forms

Screen shot of Client Card section displaying form with randomised CEI attributes

Appendix 2: Random Group Comparator Rules

Ability to display a randomised selection of forms from a larger set.

This was added as a refinement for the MPI after the initial pilot, when we realised we needed to set up fixed groups of MPI questions and rotate these groups rather than the questions themselves. In our system we found that the easiest way to set this up would be to enable randomisation of 'forms' and set up these groups as additional system forms to be displayed. For this to work, we created a "RANDOM_GROUP" comparator in our rules engine and ensured each form had a rule attached to it.

This works as follows:

1. All the rules with a matching "RANDOM_GROUP" value are put into a single pool. In the case of MPI we use the "RANDOM_GROUP_MPI_2_OF_9" value.

2. This sets a temporary "Saturating counter" value to 0 and a "Total sum" value to be the sum of the "Percentage" values for all rules within this group. In the case of MPI, we are using "50" as the value for each rule and there are nine rules, so this is "450". It selects one rule randomly from the pool to be active, with each choice being weighted based in its proportion of the "Total sum" (so a rule with a Value of 20 is twice as likely to be picked at this stage, compared to a rule with a value of 10).

3. The popup/form associated with the selected rule will be shown to users. In the case of MPI, since each rule has the same value of "50", it gives them each the same odds of being selected here. It adds the "Percentage" value of this current rule to the "Saturating counter". In the case of MPI, this will increase it from 0 to 50 in the first instance.

4. It checks if the "Saturating counter" is equal to or above 100. If it's not, it will then start the process again from the step above. If it is equal to or above 100, then it stops checking any additional rules. In the case of MPI, this will mean we go through two loops, due to each rule having a "Percentage" value of "50".

Appendix 3: Illustration of the questions a client may be asked upon registration by a Mobile Outreach team.

	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6
Mandatory questions	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?	1. First name 2. Last Name 3. Date of birth/Age 4. Extra Identifier 5. Sex 6. Contact number 7. Consent to contact?
Demographic questions	1. Education 3. Marital status	7. Marketing seen? 6. Referral?	8. Religion 5. New client?	8. Religion 1. Education	4. Spoken to contact centre? 3. Marital status	2. Occupation 5. New client?
MPI questions (1)	1. Has any member of your household completed 6 or more years of schooling?	3. What is the main material of your floor? 4. What is the main material of your walls (of your house/dwelling, not of the plot or compound)? 5. What is the main material of your roof?	6. What kind of toilet do members of your household usually use? 7. Do you share this toilet with other households?	1. Has any member of your household completed 6 or more years of schooling?	2. For household members aged 6-14, did all of these people attend school at any time during the most recent school year?	2. For household members aged 6-14, did all of these people attend school at any time during the most recent school year?
MPI questions (2)	14. Has a household member under 18 died in your household in the past five years?	6. What kind of toilet do members of your household usually use? 7. Do you share this toilet with other households?	11. Do you have electricity at home?	12. How many of the following does your household possess: - Telephone -Radio - TV - Bicycle - Motorbike -Computer - Animal cart - Refrigerator 13. Does your household own a car or truck?	3. What is the main material of your floor? 4. What is the main material of your walls (of your house/dwelling, not of the plot or compound)? 5. What is the main material of your roof?	11. Do you have electricity at home?
CEI questions	2. Who usually decides how the money you earn will be used? 4. In my community, I hear positive stories about using contraception	1. Prior to your visit today, where did you get the method that you were using most recently? 7. In my community using modern contraception is accepted	3. Who usually makes decisions about family planning for yourself? 8. Most women in my community encourage their friends to use contraception	1. Prior to your visit today, where did you get the method that you were using most recently? 5. Women like me are stigmatised if our community knows that we use contraception	5. Women like me are stigmatised if our community knows that we use contraception 7. In my community using modern contraception is accepted	6. Most men in my community are supportive of their partner(s) using contraception 8. Most women in my community encourage their friends to use contraception
Total questions	**13**	**16**	**14**	**14**	**15**	**13**