



# SPIILLOVER RISK & BASELINE SUPERVISION

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IDinsight • New Incentives Baseline • July 18, 2017

# Agenda

- Spillover Risk
  - Context from the Pre-RCT results & maps
  - Overview of options
  - Estimating the magnitude of spillovers
  - Potential strategies for reducing spillovers
- Survey Supervision
  - IDinsight staffing plans
  - Data quality checks
  - Independent Field Manager
  - NI communication plans

# There will be a risk of spillover operating in either 2 or 3 states.

- The expected effect of spillover would be to reduce the estimated impact of the program, making our estimate a 'lower bound' of the true impact.
- One goal of pre-RCT data collection was to determine reasonable buffer size for the RCT.
  - Currently, 97% of women are coming from settlements less than 5 kilometers away, as defined by being a journey that costs less than 200 Naira.
  - Furthest journey in the clinic records was 1000 naira to go 15 km.
  - The furthest journey in exit interviews was 300 Naira to go 8km.
- We do not know the effect of the measles incentives and more social marketing.
- New Incentives does not know how their settlement restriction criteria works.

# Difficulty with settlement names makes evaluating efficacy of settlement screening challenging

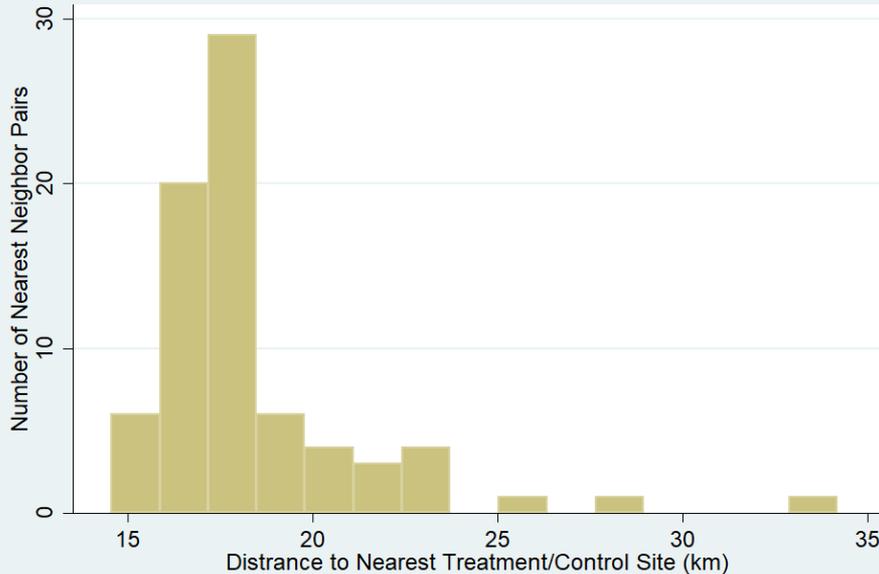
- 17% of mothers with All Babies IDs walked >20 minutes or took a bike >20 minutes.
  - 83% of those mothers are from Damri and Garni whose catchment areas are wide (up to 4km).
- 28% of those interviewed from Damri came from Sabon Gari, a town with a dispensary ~5 km away, but Damri interviews were conducted with all gathered mothers rather than beneficiaries.
- Two beneficiaries from Garni (out of 20 interviewed) walked two hours.
  - They listed their settlements as Garni and Kasuwayen respectively which are not two hour walks, but Garni Fulani or Kasuwayen Fulani may be.
- We could not definitively identify any clear cases of settlement fraud based on exit interview data.

# Adding a third state would increase the buffer, but not dramatically.

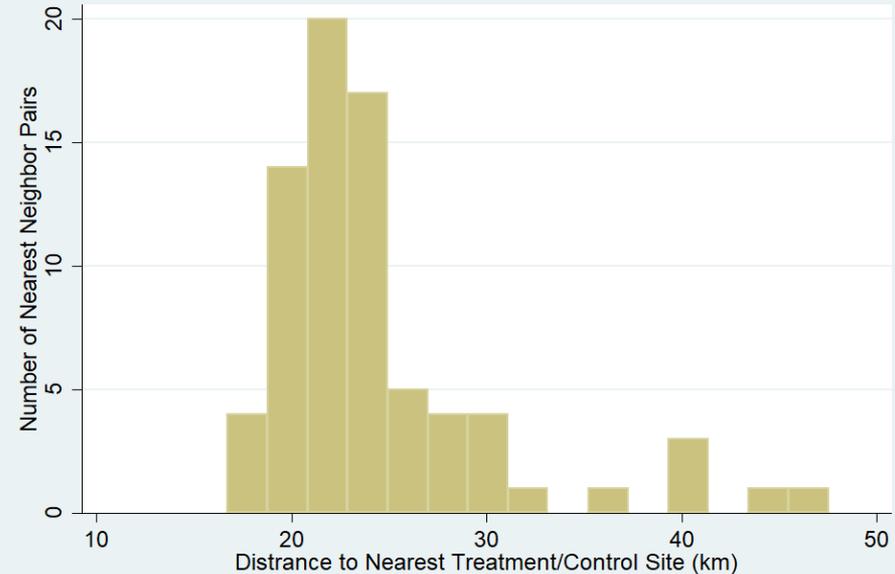
- Adding a third state would increase buffer sizes from roughly 9km (mean nearest neighbor 18km) to roughly 12km (mean nearest neighbor 24km).

Distance to Nearest Control <sup>1</sup>	Two States	Three States
Mean	18.3 km	24.5 km
10% Percentile	16.0 km	19.2 km
Minimum	14.5 km	16.7 km

Distribution of Distances with 2 States



Distribution of Distances with 3 States



<sup>1</sup> These distributions are based on us simulating a random selection of 75 treatment & 75 control clinics.

# Less than 1% of clinics have a nearest neighbor included in our study.

- There is a low likelihood of a clinic's nearest neighbor (closest clinic) being a clinic that is included in our study. This holds even when you consider the 9 closest clinics.

# of Nearest Neighbors Considered	% of Clinics Included in Selection	Expected number of treatment/control neighbor pairs
9	13% (20 clinics)	6% (10 clinics)
5	2.5% (4 clinics)	1% (2 clinics)
1	.6% (1 clinic) <sup>1</sup>	.3% (.5 clinics)

<sup>1</sup> These are the two clinics that are close in distance but separated by a river. One of the two has other clinics nearer to it which is why the pair only represents only 1 clinic out of the 159.

# A thought exercise on the risk of spillover.

- Let's assume catchments are of roughly equal population and geographic size.
- Let's also assume that for a selected treatment clinic, there are 9 nearest neighbors which are not included in our study (i.e. the control clinic is the 10<sup>th</sup> closest clinic).
- Next, let's say that 50% of the vaccination volume at the treatment clinic is from outside its catchment area.
- A rational assumption would be that people from nearby would be more likely to go to the treatment clinic than those from far away.
- Following this logic, at most 5% of the volume from outside the catchment would be from the control site. This is because a control clinic would not have a larger share of volume than neighboring clinics which are closer in proximity.
- Based on these assumptions, the effect found in a control site would be 10% of the effect found in a treatment site.
- The table below provides further detail on how this spillover would affect our study estimates:

True Increase in Coverage	Increase at Control Clinic	Impact Measured at Treatment Clinics
25%	2.5%	22.5%
10%	1%	9%

# The benefits adding a third state do not appear to outweigh the risks.

Criteria	3 States (21km mean nearest neighbor)	2 States (17km mean nearest neighbor)
<b>Timeline Risk</b>	Medium: Biggest concern is delay in clinic screening or state approval would delay survey.	Low: <b>7 weeks</b> of data collection planned which would allow us to finish before October.
<b>Operational Risk</b>	Medium: Need to scale across three states meaning there are more stakeholders to manage and clinics further apart.	Low: New Incentives has detailed plans for scaling and can use learning sites for an initial staff pool.
<b>Spillover Risk</b>	Medium: Traveling 16km for an incentive is possible, especially with a measles incentive greater than 2000 naira.	Medium: traveling 12km for an incentive is possible, especially with a measles incentive greater than 2000 naira.

# There are other (potentially more effective) ways to reduce spillover beyond adding a third state.

- Clinic pairs with the highest spillover risk as identified during clinic screening can be randomized as a pair.
- New Incentives could quiz mothers who claim to be from a particular settlement with a randomly selected trivia question about that settlement.
- New Incentives could pay local leaders to come help identify mothers from their settlement during enrollment days (works better for clinics with fewer surrounding settlements).
- The measles incentive amount could be capped at 2,000 Naira (though we generally want to avoid modifying the program for the purpose of the study).
- New Incentives could periodically pay a female catchment audit team to track down women based only on the data New Incentives currently collects.
  - This may be easier than expected as we have been told local leaders generally know the names of every household head that lives in a community.
  - The photos of mothers would also be helpful.
  - The audit would be done for a sample BCG enrollees and the punishment would be being stripped from the program. Due to the BCG scar, re-enrollment would be difficult.

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## We plan to be on the ground throughout baseline.

- We plan to have 2 full-time staff on the ground in Nigeria for the duration of baseline measurement.
  - [Redacted] (Associate) should arrive the last full week of July.
  - [Redacted] (Senior Associate) should arrive the first week of August.
  - Note: each will take ~1 nonconcurrent week of R&R. Each will also have days at a desk conducting data audits and checks (~5%).
- [Redacted] will be in Nigeria to supervise the 2 weeks of training and 1<sup>st</sup> week of data collection.
- [Redacted] may come to Nigeria during wrap-up. This decision will depend on post-baseline survey needs.
- [Redacted] will check-in daily with our team on the ground.
- Safety concerns would be the one major unknown that could cause adjustments in these plans. We will communicate any changes with GiveWell and New Incentives.

## There are many checks built into our contract to ensure IDinsight can collect high data quality.

- The survey includes a 2 week training & pilot period with a trainer fluent in Hausa.
- 100% of enumerators and 50% of supervisors will be female.
- Back-check team must have >3 years of survey experience.
- IDinsight will code the survey in SurveyCTO.
- IDinsight maintains the right to fire any enumerator for tampering with data quality.
- IDinsight has real-time access to the raw data from all survey teams.
- Hanovia must also send daily survey progress reports and weekly supervisor reports which include the results of their checks on data quality.
- We have included a .5% penalty per day in the contract for delays and that the costs for all re-surveying is covered by Hanovia (decided by back-check discrepancies).

# There are many checks we conduct to ensure high data quality throughout the duration of the survey.

- Spot-checks
  - Supervisors will complete a checklist when conducting spot checks.
  - Supervisors will spot check at least 10% of surveys.
  - All enumerators will receive period spot checks with struggling enumerators receiving more.
- Back-checks
  - 10% of surveys will be back-checked by an independent survey team.
  - The list of households is generated and shared by IDinsight directly to the back-check team.
  - We investigate all discrepancies to understand their validity (i.e. could be a difference in spelling).
  - For surveys with >15% discrepancy with back-check, we will re-survey.
- Random audio-recording-checks
  - We will program random audio-recordings to records approximately one question per survey (~2 min per survey), but we will adjust based on bandwidth.
  - These will check that enumerators are actually speaking to a respondent, correctly asking questions, and accurately recording answers in SurveyCTO.
- Data quality checks
  - We analyze the distribution of answers, the length of time spent on questions, and the distance between GPS coordinates to look for suspicious activity for 100% of completed surveys and back-checks.
  - We use this information to give daily feedback to field teams.

## We plan to hire 2 independent field managers to provide an additional layer of field supervision.

- The field manager will work throughout the duration of training and baseline surveying.
- The field manager will provide real-time feedback to enumerators to ensure they are adhering to specified survey protocol.
- The field manager will conduct spot-checks and back-checks on both survey and back-check teams for approx. 2% of all surveys.
- The field manager will listen to 5% of audio recordings and report any issues to IDinsight.
- The field manager will work closely with IDinsight to identify and communicate effective and culturally sensitive solutions to issues identified through these checks.

## We want to keep New Incentives in the loop. We also want to remain focused on data collection.

- Calls between New Incentives & IDinsight teams:
  - Every week until baseline measurement begins.
  - Every 2 weeks after baseline measurement begins.
  - Additional calls will be scheduled outside of this schedule as relevant.
- IDinsight will send a weekly email to update New Incentives on the progress of the survey (i.e. # of surveys complete, # back checks completed, # clinics completed, etc.).
- Survey circumstances may cause a change in plans outlined in these slides. IDinsight will communicate any changes directly with New Incentives if they occur.
- IDinsight will share a clinic anonymized data-set with New Incentives after the survey is complete.
- IDinsight will provide a preliminary update in September on administrative data accuracy and share more details in the baseline report.
- IDinsight plans to share a randomization do-file and preliminary data with a New Incentives technical advisor September 25<sup>th</sup>. If this date will be delayed we expect to inform New Incentives by September 8<sup>th</sup>.