BEYOND BIAS: PROVIDER SURVEY AND SEGMENTATION FINDINGS

Report Prepared by Camber Collective May 2018

Table of Contents

Executive summary

Pathfinder International is working with Camber Collective, YLabs, and Behavioral Economics in Reproductive Health (BERI) to implement the 3-year project (November 2016 - October 2019) to better understand and address provider bias. The primary outcome of the project is to increase access to a range of contraceptive methods offered through high quality provider-client interactions during contraceptive counseling and service provision for young people aged 15-24, regardless of marital status or parity, in targeted areas of Tanzania, Burkina Faso, and Pakistan. This report focuses on the quantitative and qualitative analysis conducted in Phase 1 to inform provider segmentation and solution development.

To begin, a literature review was conducted to understand the current state of knowledge regarding provider bias and develop a set of initial hypotheses to be validated through expert interviews. Based on early findings from the literature review and recommendations within the project team, 23 key expert informants were identified and contacted for semi-structured interviews. From the insights gathered from the literature review and expert interviews, we set out to build a topical classification of drivers of bias that influence provider behavior in the clinical care exchange. These broke out into three distinct categories: 1) biases specific to providers and youth clients (biographical), 2) situational factors, and 3) broader social or cultural effects.

Camber Collective worked with local market research firms to develop and implement a survey of providers to test the key drivers of provider bias. The survey instrument, which employed several types of questions and data collection methods, was designed to capture general attitudes around adolescent use of family planning, prior to asking specific questions regarding the service providers consultation behaviors and preferences.

Major insights of the quantitative survey results highlight a wide array of factors that influence how providers serve clients unsurprisingly demonstrate that bias exists among providers. Given the broad range of provider behavior, we conducted a segmentation analysis to understand the different sub-groups of providers that exist and the potential levers best suited to encourage positive behavior change. This approach looks beyond demographic factors, focusing preferentially on attitudinal and behavioral characteristics.

The segmentation analysis identified six key provider segments:

- **Detached Professionals**: Well-trained and generally unbiased, though emotionally disconnected with youth
- **Average Passives**: Aware of adolescent and youth sexual reproductive health practices, but somewhat biased and relatively unsympathetic for youth
- **Content Conservatives**: Generally open-minded and youth-friendly, but distrustful of modern methods and independent women
- **Impromptu Sisters**: Most connected with young clients, though also prone to believe they know what's best
- **Sympathetic Guardians**: Well-intentioned, and though somewhat misinformed, exhibit overall high-quality youth service
- **Paternalistic Clinicians**: Busy older doctors who, despite some progressive attitudes, show strong marital and parity bias

To help better understand the nature of provider bias, the provider survey included a series of hypothetical treatment questions for specific youth client profiles. This approach allowed us to examine what unique client characteristics, specifically age, parity, and marital status, are most strongly correlated with provider bias. The findings indicate that although the standard questionnaire appears to reveal age as a strong standalone driver of bias, the scenario response suggests that marital status and parity have a far greater influence, with age being a confounding factor, across each geography and segment. Further, by pairing the hypothetical scenario analysis with the segmentation explained above, we are better able to predict how each segment would serve various client-types.

After examining the quanitative results and the six profiles, we assessed prioritization for behavior change across the segments. We considered multiple factors to help evaluate the attractiveness of each segment, including overall population, level of bias, key opportunities, and major obstacles. Average Passives offer the most attractive segment given its size and corresponding number of youth clients who could be impacted, as well as its relatively moderate degree of bias. Detached Professionals and Content Conservatives also present attractive opportunities according to the criteria above.

By analyzing the active variables for the segments within each country, we developed tools that allow for the rapid classification of providers. These brief country-specific surveys, which require responses to 5 questions at most, accurately assess which segment a provider is best aligned. Program managers, trainers, and implementers are able to use these classification tools to understand their target providers and tailor their engagement accordingly.

In parellel with Camber's efforts, YLabs led qualitative design research in collaboration with Pathfinder to gain design insights from providers, young people, and other health system stakeholders to develop seven concept solutions to help minimize provider bias. These concepts were then matched with the provider segments that each was best suited to serve during a workshop held in September 2017.

From October 2017 to January 2018, YLabs conducted rough prototyping sessions in Tanzania, Pakistan, and Burkina Faso to assess the potential impact, desirability, and feasibility of the seven solution concepts. The next stage of the project will select a subset of the rough prototyped concepts for each country based on the impact potential, user desirability, and basic feasibility to advance to the live prototyping stage. The goals of live prototyping are to develop and test high-fidelity prototypes where users have as close to a "real" experience as possible and offer feedback for refinement. Following the live prototyping are the implementation and evaluation phases of the project, where Pathfinder will implement final solutions in all three countries with evaluation by BERI.

Project description and context

Clinical points of care are nested within complex social settings and cultural norms, which vary widely throughout the world. Providers and other medical and health professionals, as citizens and community members in these contexts, maintain their own value systems and beliefs informed by their prior experiences, local environments, and social place. As such, expressions of values, informed by social norms, experiences, beliefs, and expectations, are inevitable during clinical care and treatment of all forms. In many cases, these influences, along with factors of the health system itself, can provoke provider bias, defined as judgmental, non-empathetic, and/or low-quality provider behaviors targeted to a specific client subset, a known problem in the provision of care worldwide that compromises client health outcomes.

Adolescents occupy a unique space in these complex social settings alongside providers. Depending on the social context in which an adolescent lives, they may have limited autonomy, independence, or agency. And, as emerging adults, adolescents have unique healthcare needs. A central need for this population is the ability to control their reproductive futures and reliably fulfill their reproductive desires, as it is for adults, though social norms discouraging sexual activity in adolescents and influencing method choices, particularly unmarried young women, are as prevalent as they are diverse worldwide. To this end, providers of contraceptive services and youth are practically linked, and provider bias around this critical, high-impact interaction warrants special consideration.

Pathfinder International is working with Camber Collective, YLabs, and Behavioral Economics in Reproductive Health (BERI) to implement the 3-year project (November 2016 - October 2019) to better understand and address provider bias. The primary outcome of the project is to increase access to a range of contraceptive methods offered through high quality provider-client interactions during contraceptive counseling and service provision for young people aged 15-24, regardless of marital status or parity, in targeted areas of Tanzania, Burkina Faso, and Pakistan. To achieve this outcome, the project is following a phased approach:

- Phase 1: Deepen our understanding of provider bias through design research and segmentation of providers
- Phase 2: Use human-centered design (HCD) to develop solution concepts, and prototype, test, and refine them
- Phase 3: Implement and rigorously evaluate the costs and effectiveness of the most promising solutions that emerge
- Phase 4: Ensure full documentation of all learning, develop guidance for adaptation and scale-up, and disseminate the findings through peer-reviewed journal articles, gray literature, and dissemination meetings

This report focuses on the quantitative and qualitative analysis conducted in Phases 1 to inform provider segmentation and solution development. These data will also serve as a baseline for subsequent evaluation of provider bias solutions in following phases. Phase 1 objectives include:

1. Determine the contributing factors to provider bias and barriers/facilitators to provider behavior in serving adolescents and youth in public and private sector settings, and assess how they vary by context.
2. Inform potential solutions to address provider bias toward serving adolescents and youth.

Findings across project stages

Literature review and hypothesis development

To begin, a literature review was conducted to understand the current state of knowledge regarding provider bias and develop a set of initial hypotheses to be validated through expert interviews. Clear, replicable steps were followed in searching and aggregating findings from the literature on articles relevant to adolescent provider bias for the provision of contraceptive services. The literature review for the Beyond Bias project had 4 objectives:

- Synthesize what is currently known about healthcare provider bias in the provision of contraceptive services to adolescents and youth, including how prevailing social norms around adolescent sexuality, as well as other external and provider-centric factors may affect bias, especially where evidence exists for Burkina Faso, Tanzania, and Pakistan
- Identify key factors that likely drive provider bias in adolescent and youth contraception service delivery both globally and with a specific focus in the three countries
- Identify gaps in the research and evidence base
- Identify any previously used quantitative measures, including evaluation plans, validated survey items, or other quantifiable instruments for measuring provider bias in the provision of contraceptive services for adolescents or youth or in relevant analogous studies in which bias was measured

A total of 431 publications were recovered from the PubMed and Google Scholar database searches along with an additional 55 publications from prior Pathfinder literature searches. The following information was extracted from each article: Underlying "drivers" of bias discussed or measured (including social norms, situational biases, provider-specific biases, client-specific attributes, and method-specific biases); methodology or bias detection method; characteristics of adolescents discussed in the context of provider bias; outcomes of bias discussed or measured; behavior change interventions or provider bias solutions explored and outcomes of interventions; and country/region of focus.

Based on early findings from the literature review and recommendations within the project team, 23 key expert informants were identified and contacted for semi-structured interviews focusing on perceptions on contraceptive use, role(s) of providers, bias influencers, and behavior change. Experts included adolescent medical providers, global field experts in sexual and reproductive health, academic researchers and thought leaders on adolescent development, and behavioral change experts.

From the insights gathered from the literature review and expert interviews, we set out to build a topical classification of drivers of bias that influence provider behavior in the clinical care exchange. The objective of this initial effort was to develop an exhaustive set of drivers to directly measure with providers and subsequently correlate attitudinal and behavioral bias towards youth. As summarized in the *Research Synthesis*, a preliminary 'driver tree' was constructed based on influencers of bias a) noted in the literature, b) described by interviewees, and/or c) rationalized based on likely drivers of biased attitudes and/or behaviors towards youth clients. This long list of potential drivers was then aggregated into three distinct aggregate categories: 1) biases specific to providers and youth clients (biographical), 2) situational factors, and 3) broader social or cultural effects. These three distinct subsets of provider biases can be

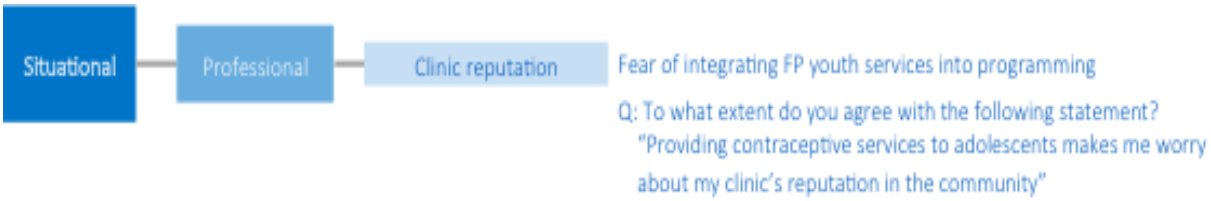
triggered, exacerbated, or lessened by specific adolescent traits, both demographic and behavioral.

The most narrow category of bias drivers are those unique to the biography of individual provider, namely their personal experience, knowledge, ability to improvise, and willingness to adapt/change, which can play significant roles in the form and severity of an individual provider's biased behavior towards youth.

Situational drivers of bias, including the working conditions and incentives of the health system in which the provider operates, form a compelling subset of factors, specific to the working environment though equally present for all other providers at a given site.

Social norms represent the broadest set of drivers an, unsurprisingly, play a formidable role in shaping adolescent-provider interactions for all providers in a given cultural setting. The most prevalent norms centered on a) protecting the fertility of nulliparous women and b) the preference for sexual abstinence before marriage, with nearly 60% expressing the former and nearly half (45%) the latter. These norms shape individual provider b negative attitudes and influence the degree to which clients' experience discrimination based on age, marital status, and parity.

Below is an example of a specific driver tested in the quantitative research:



(See Appendix 1 for full provider bias tree).

Incorporating the major drivers of bias identified above, we developed an initial qualitative segmentation of providers relative to their service of adolescent clients. The resulting 7-segment model produced the following provider archetypes:

- ***Empathic Counselor.*** Providers who empathize with adolescents, see them as complete and complex people, and treat them with compassion and without judgment. 'Ideal' providers from an interpersonal standpoint, though bias may exist in their product knowledge and/or availability.
- ***Impromptu Parent.*** Providers who are sympathetic towards youth, but who adopt a parental approach. These providers lack the ability or willingness to take a youth perspective and may additionally suffer from an inability to communicate effectively with youth during counseling. Their protective attitude that may run against some adolescents' need for decision making authority, resulting in alienation or limited choice for some clients. However, certain clients might appreciate or expect a parental or paternalistic approach.
- ***Good Citizen.*** Advises adolescent client with a strong bias towards upholding social norms, with a primary objective of achieving the best overall outcome for the client, though they may also be concerned with their reputation or the reputation of their

workplace. These providers are similar to the "Conformer" in terms of adherence to social/religious norms, though motivated from a desire to do best for the adolescent client and therefore distinct in terms of influence opportunities.

- ***Norm Conformer.*** Religious or morally-driven providers who are fundamentally against elements of adolescent contraception use based on their own beliefs or interpretation of social/religious norms. Primarily orientation is around upholding values, rather than helping the individual client. Often dogmatic in adherence to rules and thus susceptible to rules/professional obligations.
- ***Resource Manager.*** Overworked, tired and/or under supported providers who are doing the best they can with what they have, which may include limited time, limited supplies, insufficient facilities, and questionable conditions for performing certain procedures. These providers may be juggling multiple priorities, optimizing for doing the greatest good across all clients with current skills and resources.
- ***Clock-Puncher***. "Checked-out" providers disinterested in providing quality service due to low professional incentives and opportunities, including low pay. May disregard posted service policies/hours and, quite literally, 'don't want to be there'. Capable of providing family planning services, but easily inhibited by 'challenging' clients (e.g. adolescents).
- ***Detached clinician.*** Providers who are neither strongly driven by social norms nor influence by professional constraints, but who lack a connection with or interest in associating with youth. May be fearful of getting too close to clients or simply misunderstanding adolescents and view them in a negative way. Not necessarily adverse to providing family planning services to youth in principle.

This list is an initial hypothesis of possible segmentation, based on insights derived from this literature review, and served as a starting point to help inform the outcomes of the subsequent quantitative segmentation analysis. The subsequent analytical latent class analysis derived from the provider survey, complemented by additional insights from in-country design research efforts, provided a finalized and representative segmentation model (described below).

Design of survey instrument

Camber Collective worked with in-country market research firms to develop and implement a survey of providers to test the key drivers of provider bias. The survey investigates the relative influence of different types of bias for each provider, so that the data can be analyzed to identify the most prevalent influencers and types of bias for different segments of the provider population.

The survey instrument was designed to capture general attitudes around adolescent use of family planning, prior to asking specific questions regarding the service providers consultation behaviors and preferences. In this way, we aimed to avoid the potential tendency of providers to provide socially desirable responses, or responses that reflect their training as opposed to their actual consultation practices. As noted above, the survey concluded with a series of three hypothetical client 'vignettes', with variance as to age (15, 20, 25 years old), marital status (unmarried, living with partner, married), and parity (no, one, or two or more), and queried providers on corresponding service.

The survey tool includes several types of questions and data collection methods designed to measure provider bias. These methods include:

- Agree/disagree scales: Participants are read several statements relating to youth, sexuality and contraceptive use, and asked if they strongly agree, agree, disagree or strongly disagree with the statements.
- Service questions: Participants are asked questions about the services they provide adolescents, such as questions about the methods they provide and the advice they give, and the social and systemic factors that influence those services.
- Community and Social Norms: Participants are asked about the existing norms in their communities, and the role that those norms play in their service administration
- Vignettes: Participants are read a story about a fictional adolescent client, and asked questions about the kinds of services and advice they would provide to this client.
-

Questions were drafted based on the driver tree described above, developed through literature review and expert interviews, with each hypothetical driver having associated questions that were targeted and non-redundant. Once the initial draft of the survey instrument was complete, feedback was collected from project partners (Pathfinder, YLabs, and BMGF) to ensure appropriate and sufficient data was collected for their respective needs, and questions were modified accordingly. (See Appendix 2 for list of questions mapped to hypothesized drivers).

Data collection partner selection and field testing

In order to field the provider survey in each of the three target geographies, Camber vetted and ultimately selected location-specific data collection firms. Selection criteria mainly focused on prior experience conducting quantitative surveys in-country, familiarity with the field, and the feasibility of cost-effectively implementing a given sampling frame. In addition to field experience, all selected partners had to demonstrate a history of strong analytical rigor, data quality, and the ability to deliver results on schedule, which was confirmed through prior client references. Additional preference was given to those firms with affiliations with the national statistics bureaus/researchers and who employed surveyors who have previously worked on DHS surveys and are thus more familiar with the content and rigor of the approach.

Each selected vendor initially reviewed and qualitatively tested the instrument in-country to provide suggested revisions to the proposed questionnaire, survey design, and sampling plan. The vendor then submitted recommendations, along with a plan for training survey enumerators, data collection methodology, and data quality assurance plan.

Surveys were field tested in each region before being finalized. In advance of field testing survey enumerators underwent rigorous training on the overall project goals, interpersonal skills, and methods of contraception. Field testing identified questions that required modification to best suit the local cultures and languages. Camber and Pathfinder jointly reviewed and approved all materials prior to launch of the final survey in each region. The survey was made as consistent as possible across study sites, with minor adjustments made for local language and cultural sensitivities.

Prior to data collection, individual providers consented to participate in the study. Every effort was made to respect the privacy and confidentiality of the study participants. The study team has received training in ethics, and standardized procedures are being used for data collection. The following measures are in place to uphold high ethical standards and ensure confidentiality:

- All staff participating in data collection received training in study ethics, and signed an agreement to comply with them through-out the duration of the study and afterwards.
- All participants were assigned a study code number. A central master, password-protected file links participant codes to names and phone numbers. This document is stored separately from all data. Tools used for data collection, such as the survey, do not include participant names and numbers, only the participant code.
- Participants were informed that their participation is confidential, and that there will be no consequences if they choose to not participate.

Sampling methodology and data collection

The sampling frame for the study consisted of Pathfinder supported facility-level providers that offer contraceptive services to youth, preferably including long-acting reversible contraceptives (but not required). A registry of all service providers was compiled for each geography, including contact details and basic profiling information. Target sample sizes were calculated for each country based on the target audience population size and desired confidence interval of 95%. Overall and as described below for the specific target countries, survey sampling aligned with the intended intervention frame. Thus, sampling was predominately urban and peri-urban, with national coverage in the case of Burkina Faso and city-centric for Tanzania (Dar et Salaam) and Pakistan (Karachi).

Tanzania was the first field site and guided implementation for other countries. Conducted in partnership with Dalberg/Research Solutions Africa, with in-person support from Camber and Pathfinder, a sample of 301 providers from the Dar es Salaam area were surveyed, with 100% response rate. Providers were randomly sampled from 60 target public facilities across Ilala (28), Kigamboni (12), and Temeke (20) districts, with the number of providers interviewed per facility scaling with the total at the given site, yielding 271 public providers. To include a sample of private/NGO providers, and additional 30 providers were interviewed through Aga Khan facilities in Kigamboni, Mbagala, and Tandkia. Overall professional composition of those interviewed in Tanzania was a majority nurses (66%), with a smaller number of midwifes auxiliary midwifes (17%), and doctors (7%).

In Burkina Faso, surveys were fielded in partnership with REM-Africa in four of the country's 13 administrative districts (Centre Est, Centre, Cascades, Hauts-Bassins). 16-21 facilities were targeted in each district, with the number of providers interviewed per facility scaling with the total at the given site, as with Burkina Faso. A sample of 310 providers from Pathfinder-supported regions around the country were surveyed with a 94% response rate. As in Tanzania, facilities were first selected based on their prior relationship with Pathfinder, and study participants were informed in advance through their facility administration. In Burkina Faso, nearly all (91%) of respondents were midwifes or auxiliary midwifes, with an even balance between the two. A handful (6%) of providers did classify themselves as nurses.

In Pakistan, a sample of 200 providers in the Karachi district were surveyed in partnership with Foresight Market Research. Of these, 100 were Greenstar providers, through formal coordination with the Pathfinder team in county. In order to obtain a sample size more commensurate with that of Tanzania and Burkina Faso, an additional 100 providers were identified by Foresight and interviewed. The response rate for Greenstar providers, who received a formal request to participate, had a 94% response rate, while 63% of non-Greenstar providers agreed to participate in the survey. Close to half (44%) of respondents were doctors, with a similar balance of midwifes (43%) and auxiliary midwifes (4%). 7% of providers identified as nurses. The high response rates across countries were due in large part to coordination with the administrative bodies that oversee the sampled clinics. Pathfinder's presence in each geography enabled a formal request to participate to go to the providers prior to the individual data collection team's requests. As providers were encouraged, rather than required, to participate, and as all interviews were conducted in private with strict confidentiality, our assumption is that this approach did not bias the sample or responses. It is worth noting, however, that the provider sample was predominantly in the network of Pathfinder clinics, which is highly relevant for the project and potential deployment of solutions, though should be considered before extrapolating findings to the overall country level. Response rates were considerably lower among Pakistani providers not participating through Greenstar and therefore not receiving prior notification of the survey, though even here, nearly two-thirds of these providers agreed to participate.

Overall quantitative findings

Major insights of the quantitative survey highlight a wide array of factors that influence how providers serve clients. There are several opportunities, but also challenges that were uncovered.

In aggregate, there is a high level of interaction with youth across all three countries, with more than four out of five providers counseling older youth (19-24) at least a few times a week and half counseling younger clients (15-18) at least as frequently. Three quarters of providers agree they enjoy working with young clients, with 40% strongly agreeing. Nearly nine out of ten providers feel supported by their superiors in providing all methods of contraception to youth. However, although the high level of youth interaction is promising, only half of all providers have received specific training in the service provision to youth, and less than half of the providers interviewed feel that they are paid fairly for the work that they do, driven by a very low satisfaction with compensation in Burkina Faso (23%). It is important to note that these aggregate results may mask outliers with specific subgroups, the characteristics of which are described in detail in the Segmentation section.

The survey findings additionally show that over half (55%) of providers agree sex is a healthy part of life for young people, though this attitude is considerably higher in Pakistan (70%) than in Burkina Faso (20%) or Tanzania (31%). This is likely due to the fact that Pakistani providers almost exclusively council married youth due to the more extreme taboos against pre-marital sex and the vast majority of their interactions are colored accordingly. It is interesting to note, however, that when questioned if youth have no modesty in talking about sex, three-quarters of Pakistan providers agreed, somewhat higher than the overall sample average of 66%. The significantly more conservative cultural attitudes in Pakistan as compared to the African geographies, was further reinforced by their strong belief (70%)that providing unmarried youth contraceptives may

make them more promiscuous, more than double the rate observed in Tanzania (31%) or Burkina Faso (20%)

There also appears to be a relatively low level of predetermination of youth family planning needs. Of all providers across the three regions, two-thirds do not believe they usually know what a young client needs as soon as they come in for service. However, half of providers feel young clients are not capable of choosing the method that is best for them, and many hold strong negative perceptions of the appropriateness of different methods for youth. Specifically, over half of respondents disagreed that IUDs are appropriate for women without children, though again, this response saw significant variance by geography with three-quarters of Pakistani providers disapproving of the practice while a similar number (70%) in Burkina Faso agreed that IUDs were indeed appropriate for nulliparous clients.

The survey responses highlight the impact of social norms on provider bias. A promising insight across the three countries is that nearly three-quarters of providers believe that if a poor girl can avoid pregnancy during adolescences, she'll be able to get a well-paying job later in life. Similarly, three-quarters of providers feel comfortable providing contraception to unmarried girls who will soon be married. However, when it comes to methods of contraception over half of all providers believe that clients who haven't yet had children should be told that certain methods should be avoided.

The above highlights unsurprisingly demonstrate that attitudinal bias exists among providers and is driven by several factors. The segmentation approach examined below offers a better understanding of what these biases are, in which subgroups they manifest most significantly, and potential approaches to solutions.

As noted above, these findings often displayed significant variation by country. For example, Pakistan stood out quite strongly from the other countries in terms of conservative attitudes and beliefs. Practitioners in Pakistan were much more likely to believe that providing FP to unmarried youth would make them more promiscuous, that they require parental consent, and that young people are not capable of choosing the method that is best for them. Almost none of the providers in Pakistan had ever participated in specific training on service provision to youth. As discussed above, providers in Pakistan were more likely to believe that sex is a healthy part of life for young people, likely driven by the fact that the majority of their interactions with youth are with those engaged or married. This difference in the nature of client engagement and the perception of the 'average' client in Pakistan as compared to Burkina Faso and Tanzania is an underlying experiential influencer of bias towards youth.

Providers in Tanzania were much more likely to agree that they enjoy working with young clients, were the most likely to have participated in a youth specific training, and feel the most supported in providing methods to youth. They were however the least likely to agree that sex is part of a healthy life for young people and are the most likely to believe that young clients may need to be punished for bad behavior (43%). They do, however, feel very comfortable providing contraception to an unmarried woman who is about to become married. These markers suggest providers are emotionally connected and vested in their clients, but also look down on them as immature and irresponsible, characteristics of the 'impromptu parent' archetype proposed as part of the hypothetical segmentation.

In Burkina Faso, providers are most likely to feel undercompensated for the work they do, but nevertheless appear to provide a decent level of counseling. They are the most likely to believe that they don't know what a young client needs when she comes in for consultation, and that the client does not require parental or spousal consent for contraception. They also appear to be the most open regarding method choice, as they are the most likely to believe women can choose the method that is best for them, and that IUDs are appropriate for women without children.

Identification of major drivers of bias

Approach to driver analysis

In order to better understand which drivers were most strongly implicated in promoting provider bias, we conducted and analysis to identify the correlation between both aggregate categories for drivers of bias – biographic, situational, and societal – as well the their individual underlying sub-drivers with biased attitudes and behaviors in providers. First, custom variables were created using combinations of survey items thematically corresponding to 17 discrete potential drivers of bias. Definitions for the binary presence of each driver based on survey responses are listed in Appendix 4. These custom variables, many of which employing Likert scoring, were tested by looking at raw response data & adjusted accordingly to appropriately define the presence of an individual driver

Outcomes of bias were defined in a similar fashion, following an initial grouping into the following four major categories, ordered in increasing level of severity:

- Low attitudinal bias: Provider attitudes that reflect a relatively low level of bias, unlikely to influence biased behaviors but may be felt by young clients.
- High attitudinal bias: More severe provider attitudes that may be predictive of biased behaviors and/or may perpetuate stigma.
- Behavioral bias: Statements that indicate provider provision of service, including requiring parental / spousal, deciding not to provide services based on age, parity, or marital status, or allowing privacy violations.
- Decline service: stated preference to decline to counsel a hypothetical client based on age, parity, and/or marital status without any more detail about her circumstances or client background.

Using these binary definitions for the presence of the 17 individual drivers and manifestations of the major categories of bias, a heat map showing the differential increase in prevalence of a bias outcome corresponding with the presence of each driver. Interactions between drivers and biases were then scored for relative strength, and those that were a) above the mean and b) in the top tercile of correlation scoring highlight to illustrate the drivers most associated with the manifestations of bias.

Summary of driver analysis findings

Social norms emerged from this analysis as the most consistent driver of biased attitudes and behaviors overall. Even when "stress tested" to show significant prevalence at the top third of results from above the mean, attitudes about the role of young women as child bearers in society, and how using FP methods may negatively affect their reputation, rooted nearly all of the expression of bias we investigated.

Attitudinal expressions of bias carry different consequences than more severe forms, including declining counseling or services to clients based on their age, parity, or marital status. Providers who reported feeling overwhelmed or overworked / overbooked at their clinics showed serious correlations to declining service, but was not a driver for attitudinal bias. Work flow management or personnel support for method provision may improve client access to FP services.

Providers having negative attitudes about young people or sex and sexuality was a major theme noted in the Synthesis Report. We see here that providers having negative attitudes may mainly affect relatively benign forms of bias, and are not significant drivers of more punishing or denying behaviors among providers. Interventions around improving provider attitudes may thus not have wide reaching impact on the quality of FP service provision for young clients.

Some drivers, including misinformation about hormonal methods, consistently show correlation with declining counseling and services for specific groups of clients, such as very young clients, clients without children, or unmarried clients. Providers may be misinformed in multiple ways about the efficacy or safety of hormonal methods. Interventions that aim to improve or change attitudes or behaviors will be most effective if they are targeted to those drivers that show strong correlation with a range of expression of bias.

Analysis of drivers correlated with attitudinal bias

Four drivers — provider attributes, difficulty communicating, clinic reputation, and social norms — rise to the top with above average interactions scores for both low and high attitudinal bias. While attributes (having adolescent children and used modern methods personally) are not addressable directly, communication, social norms and social change interventions, and those focused on social marketing or branding of clinics and FP providers may all represent interventions that could reduce biased service attitudes towards youth.

Provider responses that contraceptives for unmarried young people may make them more promiscuous was a key item in a varied set of driver groups. High prevalence between this attitudinal measure was noted within the drivers of attitudinal bias noted above. It is not surprising that we see such high item prevalence around an attitudinal item that focuses specifically on sex and cultural attitudes around sex and gender. Other 'low attitudinal' items focus more on perceptions of youth and appropriateness of contraception. It is interesting to note that one of the strongest interactions is that between contraception as a perceived driver of promiscuity and providers not having young adult children, which suggests the impact of empathy in forming attitudes.

The attitudinal manifestation that youth are often incapable of choosing their own best method is a strong proxy for paternalistic attitudes, which is strongly corelated with the negative attitudes driver and specifically the belief that young clients with no money are impossible to serve. This may imply an interpretation perhaps that "inability" is tethered to economic ability to pay or services more so than an inherent disability on account of young clients being young.

Not all that surprisingly, among high attitudinal biases, the perceived responsibility to teach young people how to behave and that young people may need to be punished for bad behaviors had high prevalence across drivers. These are perhaps the two most "extreme" examples of high attitudinal bias, and may lead to behavioral bias (denials, restrictions, etc.). Two standout interactions are worth noting: First, a perception that part of their role as providers is behavioral control is strongly correlated with the response that young women need to have children as soon as possible after marriage, very much in line with reproductive control and

gender dynamics discussed in the initial literature review. Second, and of particular interest, the strongest interaction among high attitudinal biases is between the behavioral control item and a lack of recent provider FP training. This speaks volumes about the importance of proximal, relevant trainings for providers that can have an impact on high attitudinal biases.

Analysis of drivers correlated with behavioral bias

Eight of the 17 drivers show above average scores for behavioral bias indicators of poor-quality service: having lack of empathy for young people, lack of product experience, feeling embarrassed or having difficulty communicating, risk avoidance related to dual counseling and care for HIV, workplace norms, clinic reputation concerns, geographic displacement, and social norms. Provider interventions as noted in the initial Research Synthesis that include empathy-building with young people and interacting with young people may serve to reduce embarrassment and increase empathy.

Two specific behavioral manifestation stand out for consistent correlation with nearly all drivers: the belief that it is acceptable for other providers to interrupt FP counseling sessions (violating privacy) and the belief that clients with daughters have different FP needs than clients with sons. Violations of privacy were a key aspect highlighted in the Literature Synthesis, while gender-related societal norms for male children as a driver of bias for provision of FP services was only briefly touched on. Both of these behavioral items had high correlates in the social norms driver, particularly around concern for client reputation.

Somewhat surprisingly, items about whether providers would require the consent of husbands or parents before providing services did not show high interaction with many of the drivers. Requiring consent, or potentially withholding FP services before consent could be obtained, does not appear to correlate closely with drivers of bias.

Provider who do not use a counseling tool or aid in FP sessions with young clients showed a very high correlation with their self-report that they may decide not provide modern methods to clients who are unmarried. This aspect of workplace norms may be a promising avenue to explore for combatting marital status bias among providers.

In terms of outright denial of services or methods, personal experiences and specific life attributes of providers appear to be important factors. Among those who stated during they would decline counseling and services due to age, parity, or marital status, nearly all reported never having used any methods of FP personally. This may be skewed in part because of the high male representation in the sample, but is worth noting that personal exposure to modern methods may play a part in reducing bias. Workload also appears as a strong driver of declining service. Over 84% of providers who would decline counseling and services for any reason noted their clinics as "overbooked" or themselves as "overloaded," which may be the reason they are skipping counseling or declining services outright for presented client scenarios. Declining services or counseling seems to occur most often as a stated result of a client being unmarried across all drivers. Young clients who are unmarried face biased behaviors among providers most likely because of widespread disapproval of sexual activity outside marriage.

Religion as a driver of bias is prominent at the item level for examples of providers declining services based on parity. An important note here is that parity bias includes clients not having any children, or the perception that they do not have enough children. Drilling down into the distinctions of those biases was beyond the scope of the driver analysis, but we can confidently

look at religion as a driver to intervene around parity bias specifically. Religion was not as prominent of a driver for declining services based on age.

For providers declining services based on client age, we see similar drivers involved as to those responsible for parity-driven bias, albeit less strongly and with religion as a major factor. Clinic reputation, too, was more relevant in age-related bias for declining services, which suggests the potential for efforts aimed at strengthening the community image of clinics in delivery of YFS.

Segmentation theory, process, and development

Segmentation: theory

The manifestations of provider bias can be difficult to measure, and exceedingly difficult to address. There is a wide range of provider behavior when it comes to counseling young and/or married women, and therefore it is important to understand the different sub-groups of providers that exist and the potential levers best suited to encourage positive behavior change.

A more basic segmentation analysis looks solely at demographic traits, and while straightforward, typically lacks power in identifying levers for influencing respondent behaviors. The segmentation conducted as part of this project looks beyond demographic factors, focusing more on attitudinal and behavioral characteristics, which can be a powerful tool for understanding intent to change behaviors.

This approach requires more nuanced data inputs, including questions that attempt to capture attitudes, beliefs, and actions. We opted for latent class analysis as these models are 1) less subject to biases occurring when data does not conform to traditional modeling assumptions (linearity, normality, homogeneity); 2) accommodate mixed scale types (nominal, ordinal, etc.); and 3) can simultaneously assess relationships based on identification of classes and covariates.[1]

Segmentation: process

Developing a segmentation is a multi-step process and incorporates both quantitative analysis and qualitative assessments. The first step is to discern which variables truly matter in producing meaningful and distinct outcomes. Amongst the total set of variables from the survey, Camber analyzed the results in SPSS to find where multiple variables could be combined, to filter out variables with high levels of missing data or refused responses, and to identify variables with variability amongst response options.

From the total set of all available variables, an initial selection of active segmentation variables was chosen based on findings from the literature reviews, the cleaning process, and guidance from stakeholder consultations. From that initial selection, several iterations of the segmentation model were completed, adding and removing active variables to assure that:

- A cluster analysis could be chosen where each individual segment was sufficiently large to represent a true coherent group, (~>10%) though not so large that findings were too generalizable
- The model had optimal statistical significance based on a series of statistical tests (BIC, Npar, L^2, p-value, and class error)

[1] Magidson J, Vermunt JK. 2002. Nontechnical introduction to latent class models [working paper]

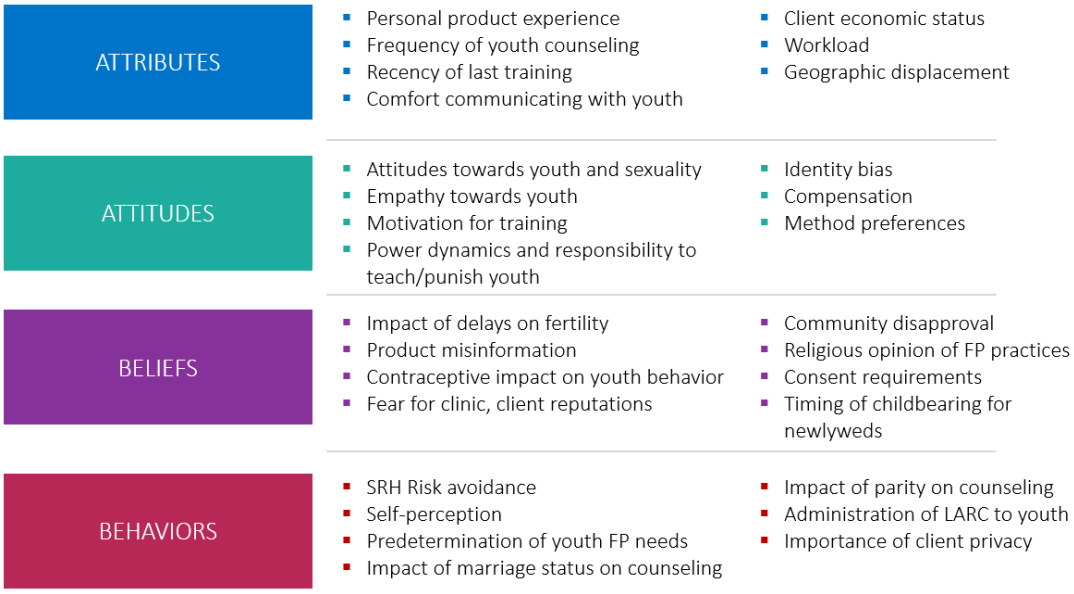
We ran segmentation models iteratively to determine the best model, and within that model, the best number of clusters. This process is iterative, and both an 'art' and a 'science':

- The best model is determined by the level of differentiation across segments and a qualitative judgment of the consistency of the segment's narrative and relevance of the differentiating factors for our project context
- The preferred number of clusters within the chosen model is determined by the bayesian information criterion (BIC) statistics and level of classification error, the practicality of size of the segments, and the migration patterns across cluster solutions

Segmentation: development

Through the iterative segmentation process, we ran 5 separate models and evaluated each with up to eight clusters. After pressure-testing each solution, we ultimately chose a 6-cluster solution. The segmentation was based on the overall profile of providers, which included, but was not limited to, the specific drivers of bias examined earlier. The list of active variables for the final segmentation included 29 variables that can be categorized into four key areas: attributes, attitudes, beliefs, and behaviors. Variables related to provider attributes include the providers' comfort communicating with youth, workload, and timing of last training. Active variables related to attitudes include providers' attitude toward youth and sexuality, empathy towards youth, and method preferences. Provider beliefs were captured through several variables including product misinformation, client consent requirements, and religious opinions of family planning practices. And finally, active variables related to provider behaviors include the impact of marriage on family planning counseling, the impact of parity on counseling, and the predetermination of youth family planning needs.

Figure 1: List of final active variables



Analysis of segments

Segment Profiles: Overview & deep-dive

Once the statistical analysis identified the six clusters, we examined the survey responses for each group to get a better understanding of their respective attributes, attitudes, beliefs, and behaviors. After examination, we developed profiles for each of the six segments and identified opportunities for behavior change.

Detached Professional (33% of providers; Composition: Tanzania 8%, Burkina Faso 92%, Pakistan 1%)
The first and largest segment is the Detached Professional, which is made of mostly Burkinabe midwifes who frequently engage youth clients and have used family planning themselves (94%). These providers are well-trained, with low attitudinal and behavioral bias towards young clients, though 15-20% do evidence marital and nulliparous biases. Detached Professionals are apprehensive in providing reproductive health service to adolescents and youth, and their major behavior change opportunity appears to be in strengthening their emotional bond with youth.

The majority of Detached Professionals are trained on youth family planning, but they aren't any more comfortable with youth and they don't particularly enjoy serving them. This segment appears to be disconnected from youth clients and seem not to care deeply. Although Detached Professionals report not very close to any impacted youth, they bear no ill-will and the majority (two-thirds) feel a responsibility to teach young people how to behave.

Detached Professionals are less strained at work relative to other segments, though they are somewhat disgruntled regarding their compensation. Somewhat surprisingly, this group is also acutely concerned about their clinic's reputation and are afraid that providing family planning to youth may be a reputational risk.

Detached Professionals know the right answers – perhaps the byproduct of training, which has either been engrained or just enables them to provide the desired responses. They believe young clients are capable of choosing the right method, which suggests that as much as they don't enjoy working with youth, they respect them. Further, Detached Professionals strongly agree that marital status should not influence family planning options, but they are very likely to promote abstinence among youth and unmarried clients – more so, in fact, than any other segment. This segment also evidenced strong concern for their clinic reputation, which likely influences their desire to promote 'safe' practices such as abstinence in lieu of more controversial methods.

Average Passive (32% of providers; Composition: Tanzania 67%, Burkina Faso 14%, Pakistan 19%)
Split across geographies, age and educational groups, and religion, Average Passives are mostly nurses & midwifes who appear to embody baseline professional and social norms across the sampled regions. Across all six segments, Average Passives report the lowest rate of recent FP training (32%), though recent efforts by Chagou la Maisha in Tanzania may have increased this number. Many bias drivers are present among this group, most notably religious concerns, low rates of youth counseling, though attitudinal and behavioral bias is not severe and these

providers generally feel strongly that it is not their role to teach youth how to behave. A major behavior change opportunity could be to deepen Average Passives' understanding of youth challenges and empathy for AYSRH.
Across nearly all indicators and as their name connotes, this group is average. Average Passives are neutral about whether they think sex is healthy, and whether they enjoy working with youth. Overall, they do not seem interested in becoming invested in youth. Few are close with a youth client who has had a major problem post-pregnancy. However, Average Passives does appear to be most concerned with clients' reputational risk of using family planning, which suggests the potential for deeper caring for youth.

The Average Passive group tends to exhibit average amounts of behavioral bias compared to other segments. These providers deny modern method counseling to about one third of youth, unmarried and nulliparous clients, with the highest rate of service refusal towards unmarried clients.

Content Conservatives (15% of providers; Composition: Tanzania 2%, Burkina Faso 0%, Pakistan 98%)
Nearly entirely Pakistani, these doctors & nurses tend to be younger, less religious, and professionally content. While they enjoy working with youth and generally trust youth to make their own decisions, they demonstrate a strong distrust of hormonal methods and conservative perspectives on sex before marriage. While engrained norms may be harder to shift, an immediate behavioral change opportunity with this groups appears to be dispelling product misinformation.

Content Conservatives demonstrate very high levels of bias towards youth and nulliparous clients. Compounding this are the local Pakistani laws and norms prohibiting sexual relationships before marriage, which prevent providers from providing services to unmarried clients. This segment holds conservative beliefs on youth autonomy and social roles, with nearly half supporting the need for spousal or parental consent, which is more than any other segment. This group believes it is responsible for teaching youth how to behave, however none of these providers have received AYSRH training. This segment is also misinformed regarding the safety of hormonal methods for youth.

In the near term, there is an opportunity to dispel misinformation among this segment. More broadly however, addressing attitudinal biases towards youth though social norms is faced with challenges.

Impromptu Sister (10% of providers; Composition: Tanzania 63%, Burkina Faso 31%, Pakistan 6%)
This group skews younger, is less educated, and appears to strongly identify and connect with youth clients, which can mean they might judge them for making mistakes or boss them around like younger siblings. Nearly all Impromptu Sisters feel they have a responsibility to teach youth and an acute concern for fertility delays. A behavior change opportunity would be to leverage their close bond in clarifying policies that result in the best outcomes for youth.

Impromptu Sisters are professionally strained, with nearly all feeling overbooked and underpaid. However, nearly all enjoy working with youth and are very comfortable counseling on family planning. These providers educate youth around safety of methods and the value of family planning. This group does not feel a need for parental or spousal consent

Impromptu Sisters are emotionally invested (perhaps too close) to youth clients, with many feeling they already know what's best for their "little sisters." Although Impromptu Sisters exhibit very little marital bias, they do show a very strong nulliparous bias and a desire to protect fertility. These providers do not consider sex to be a healthy part of life for youth.

Sympathetic Guardian (7% of providers; Composition: Tanzania 94%, Burkina Faso 5%, Pakistan 2%) While a majority of these relatively young providers, mostly nurses, are the least open minded about youth sexuality, they tend to find youth easy and enjoyable to work with and respect their decision making. They recognize the importance in delaying early pregnancy and are not concerned about clinic or client reputations. Their lack of formal AYSRH training and strong bias against IUDs, however, suggests a behavior change opportunity to provide clear guidance on methods and focus on the values of spacing and limiting children.

Among Sympathetic Guardians, existing behavioral biases may be driven by deep-seated religious and/or cultural norms. Very few providers in this segment believe their religion supports one to limit how many children they have, nor do they believe sex is a part of a healthy life for youth. Although Sympathetic Guardians are open to serving all clients and exhibit no consent or privacy biases, they would deny a modern method to about one third of nulliparous clients, and one quarter of youth and unmarried clients.

Paternalistic Clinician (3% of providers; Composition: Tanzania 4%, Burkina Faso 0%, Pakistan 96%) The smallest segment, Paternalistic Clinicians, are predominantly older doctors who frequently counsel youth and are generally comfortable doing so, despite considerable generational gaps. Some progressive attitudes around youth decision making and timing of pregnancy are offset by strong marital and nulliparous biases, as well as a fear of competing SRH risks. A major behavioral change opportunity may exist in helping these providers improve efficiency of servicing youth through counseling tools.

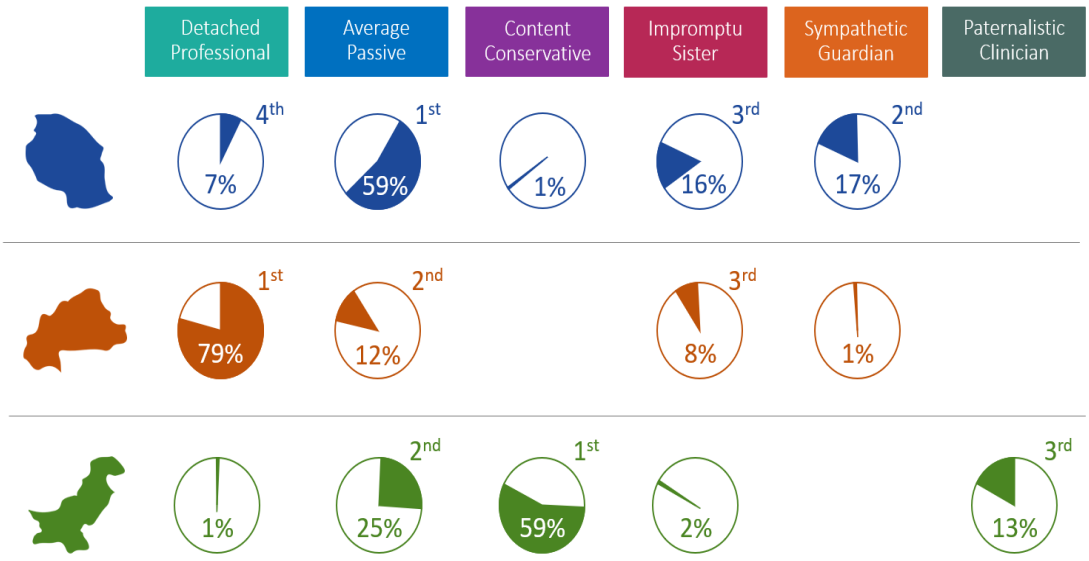
This segment, likely set in their ways of thinking and counseling has the highest nulliparous bias (80%), a very high marital bias (66%), and little respect for privacy. These biases are compounded by local laws and norms prohibiting sexual relationships before marriage prevent providers from providing services to unmarried clients. In addition, these providers have limited personal experience with family planning use and have little to no AYSRH training.

However, behavior change opportunities exist among this segment. Given this is the most over-booked group while also strongest believers that youth take more time to counsel, there is an opportunity to emphasize efficiency through tools to aide AYSRH counseling. Further, there is an opportunity to leverage this groups progressive beliefs on timing and limiting

Country composition

When examining the composition of segments by region, we see that each country has a strong concentration of a single segment. Over half (59%) of all Tanzanian providers fall into the Average Passive segment, while a similar proportion of Pakistani providers are Content Conservatives. In Burkina Faso, we see an even stronger disparity, with Detached Professionals making up nearly four out of five providers. (See Figure 2 for segment composition for each country.)

Figure 2: Segment composition for each country



Hypothetical scenario analysis

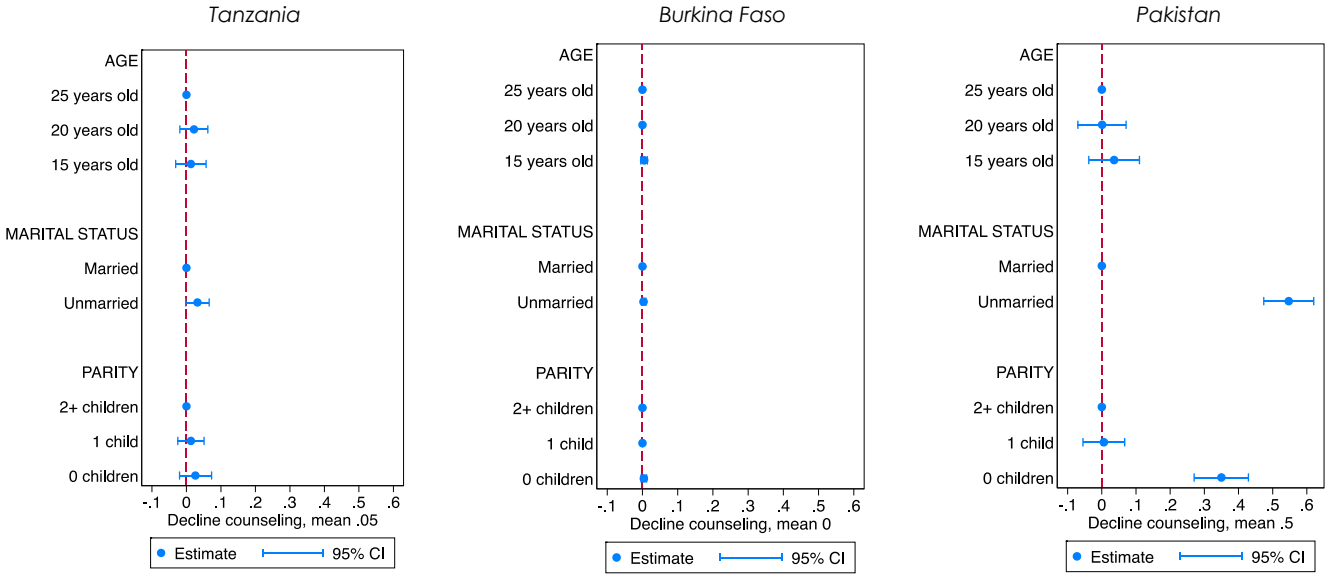
Traditional behavioral research methods, including surveys, interviews, and observations, are often used to understand the characteristics and behaviors of populations, however in the absence of running a true experiment these approaches run the risk of creating an incomplete picture with confounding factors and the risk of bias. To supplement these methods, the private sector has long used conjoint analysis as a tool to better understand and predict consumer preferences. This approach allows market researchers to examine how buyers make trade-offs among varying features and attributes of competing products. The basic premise of conjoint analysis is to ask consumers to make tradeoffs across a series of hypothetical products, each with slightly different attributes. This approach is useful in revealing the product characteristics that are most important to consumers. While we did not provide respondents with actual trade-off decisions, we adapted aspects of this methodology in our provider survey and subsequent analysis. Critically, we leveraged the large sample set to gain insight into a larger number of distinct client profiles (27) than could be tested with any individual provider.

For this approach, we presented three client profiles to each respondent and asked a series of hypothetical service-related questions in order to understand what unique client characteristic (age, parity, and/or marital status) are most strongly correlated with provider bias. Specifically, as part of the scenario questioning we asked providers if they would provide any family planning counseling, and if so, if would they a) counsel on modern methods and/or b) strongly promote abstinence. These questions were presented sequentially, and the results are tallied accordingly; providers who indicated they would decline service for a particular profile were not asked any additional questions. Providers who did indicate they would provide service were then asked if they would provide modern methods and, separately, if they would strongly promote abstinence. Therefore, the sum of percentages for denying services and refusing to provide modern methods or promote abstinence cannot exceed 100%. The attributes of the hypothetical clients experimentally varied by age (15, 20, 25), marital status (unmarried, living

with partner, married), and parity (0, 1, 2+), creating a total of 27 hypothetical client profiles, three of which were randomly assigned to each respondent.

By observing how providers stated they would serve the various hypothetical clients, analysis conducted by BERI estimated which client attributes are most strongly correlated with the behavioral bias outcomes noted above. Although the standard questionnaire suggests youth as a predominate driver of bias, the conjoint analysis indicates that marital status and parity have a far greater influence, with age being a confounding factor. Providers stated they were more likely to decline counseling for unmarried and nulliparous women under the believe that family planning is note appropriate for such clients. Further, when controlling for marital status and parity, provider stated responses do not vary by client age. Based on this, interventions may be best suited to focus on attitudes and practices towards unmarried and/or nulliparous women. Further, by observing differences across countries, we see that the provider bias based on these two factors are only present among providers in Pakistan.

Figure 3: Country-level conjoint analysis results – Refusal to counsel on modern methods



The conjoint analysis did not inform or influence the segmentation. Rather, by pairing the conjoint analysis with the segmentation explained above, we are better able to predict how each segment would serve various client-types. Further, conjoint analysis allows for the comparison of how segments may say they will serve particular clients versus how they may actually behave.

Detached Professionals are consistent in terms of relatively low attitudinal bias and generally low behavioral bias, though their rates of abstinence promotion are high. This is in-line with their lack of empathy and low-risk approach in supporting abstinence over methods that would be more complex to explain or risky. Their lack of empathy leads them to believe that 'abstinence is a simple/easy choice for youth.'

Average Passives manifest the same middle-of-the-road prevalence across the behavioral biases as demonstrated attitudinally in the main survey. Very few (11%) would outright refuse service primarily due to age, though the rate is considerably higher for unmarried clients (27%),

four-fold higher than any other Burkinabe or Tanzanian segment and consistent with the 31% who indicated they need to know marital status before providing counseling. Bias towards nulliparous clients is roughly half as prevalent in this segment, also consistent with a lower proportion (26%) who believe those without children should avoid certain methods.

Content Conservatives are consistent in their high attitudinal and behavioral biases. They enjoy their jobs and working with youth and are not as extreme as paternalistic clinicians, though nearly three quarters would still refuse service to unmarried or nulliparous clients.

Impromptu Sisters evidence stated attitudes that represent a desire to protect fertility – empathizing with their younger clients who don't yet have children. Yet when it comes to actual behaviors, the rates of denying those same clients service are much lower. These are the 'big sisters' who are hard on their younger clients attitudinally but are also able to empathize with them.

Sympathetic Guardians are the least biased in their attitudes and unsurprisingly so to in their behaviors. They are a little out of touch with youth, evidenced in a slightly higher rate of those denying modern methods in a perceived effort to protect fertility, but very well-intentioned.

Paternalistic Clinicians are the most severe in both attitudinal and behavioral biases. These providers, which are exclusively found in Pakistan, show very strong levels of bias across all three characteristics, denying counseling for modern family planning methods for nearly all clients that were very young (age 15), unmarried, and/or nulliparous.

Development of recommendations

After examining the results of the analyis and the six profiles, we set out to assess how to prioritize the various segments. We considered multiple factors to help evaluate the attractiveness of each sub-group, including overall size, level of bias, key opportunities, and major obstacles.

The Detached Professional segment presents a moderately attractive opportunity. Althogh this is the largest group, making up one-third of all providers, itheir relatively low bia suggestes that the impact of any interventin will not be sizeable at an individual provider level. Nonetheless, behevior change among this group may be relatively straightforward and focus on emotional connectivity over protocols or clinical education. An opportunity may exist to appeal to their professionalism and concern over clinic reputation.

Average Passives, in contrast,offer a very attractive opportunity for impact. This segment is similar in size to the Detached Professional sub-group, yet possess a much higher degree of attitudinal and behavioral bias. Similar interventions could be envisioned for Average Passives and Detached Professional thatfocus on building empathy and helping providers connect with youth clients, though this segment evidences higher existing concern for their young clients. Unlike Detached Professionals, Average Passives also lack a solid educational base – either through personal FP use, training, or a high volume of youth clients – to have the proper protocols embedded as part of their routine. Efforts here would also need to address these shortfalls.

Content Conservatives offer a moderate opportunity, and while only half the size of the Detached Professionals segment– approximately 15% of all providers- the severe nature of their behavioral bias and high rates of youth services suggest a major opportunity to improve service

outcomesEntirely concentrated in Pakistan and typically well-trained, a big lever for this group of untrained providers could be to address method misinformation and formalize delivery protocols, mindful of the strong cultural norms in-country.

The Impromptu Sister segment presents a smaller opportunity. Although moderately sized with 10% of all providers, this group exhibits less bias than other segments. Further, if behaviours among this group are engrained, behavior change can prove to be difficult. However, there is an opportunity to leverage their prior personal use of family planning methods.

Similar to Impromptu Sisters, Sympathetic Guardians provide a low attractive opportunity. Due to its small size (7% of all providers) and low levels of bias, any intervention targeted to this group would have a relatively small overall impact.

Paternalistic Clinicians, being the smallest segment (3% of providers) also are a less attractive opportnity. There is a high level of bias among this group, which may also be set it its way and difficulty to modify behaviour. One possible win among this group would be leveraging tools for more efficienct AYSRH counseling, given the overbooked nature of the segment.

It is important to keep recognize this assessment of segment attractiveness is preliminary, and pairing it with the adidtional design research and concept development conducted by YLabs with allow for a more thorough evaluation of opportunities. This process is explained in later sections of the report.

Creation of classification tool

The segmentation analysis we conducted is powerful in helping understand the various provider personas and how best to tailor approaches to address their biases. However, once these tailored solutions are developed, there will be a need to classify target providers to determine which of the six segments they fall into. While our final segmentation model utilized 29 active variables that were defined through 36 survey questions, it would be challenging to ask providers to complete a survey of that length and with such sensitive questions. Fortunately, given the segment composition of each country discussed above and the fact that each country is dominated by only a subset of the segments, far fewer questions are required to classify a provider within each region.

By analyzing the active variables for the segments within each country, we developed tools that allow for the rapid classification of providers. These brief country-specific surveys, which require responses to 5 questions at most, accurately assess which segment a provider is best aligned. Through this process, we also removed highly sensitive questions that providers may be reluctant to answer in public trainings or programs. (See Appendix 3 for Burkina Faso classification tool.)

As segment-specific solutions are developed and deployed to address provider bias, program managers, trainers, and implementers are able to use these classification tools to understand their target providers and tailor their engagement.

Evaluation of design research concepts

YLabs led qualitative design research in collaboration with Pathfinder to gain design insights from providers, young people, and other health system stakeholders to develop a series of concept

solutions to help minimize provider bias. Design research methodologies included interviews, observations, role play, participatory research activities to investigate provider biases and behavior toward young women. In addition, research examined how providers' professional environments, aspirations, and relationships affect their interactions with youth, including the social, technological, and economic constraints that influence decision-making.

The research insights led to seven concepts, which were then matched with the segments that each was best suited to serve during a workshop held in September 2017. The following table describes the concepts and the segments they were hypothesized to be best suited for.

Concept	Description	Target Segments
Interactive Narratives	Experiential stories with alternative endings and insights into a young person's thoughts, feelings, and needs, to show providers how their actions can impact a youth's life.	• Average Passives • Content Conservatives • Detached Professionals
Youth Virtual Clinic	A digital or SMS virtual youth clinic experience that helps providers put learnings into practice and self-assess the quality of services they provide.	• All segments
Nurture	In order to leverage the support of community members who champion youth access to services, Nurture delivers powerful and engaging digital stories/testimonials from communities, youth, and providers.	• Average Passives • Content Conservatives • Detached Professionals • Sympathetic Guardian
Youth Bill of Rights	Visual client feedback survey on service quality, with accompanying 'Bill of Rights': quality standards that inform young people on what good looks like, and empower them so they might hold providers accountable.	• All segments
Bypass the Biases	Analog or digital decision-making tool that is country-specific and rooted in questions that address young people's needs. It helps providers to provide an evidence-based, guided choice for youth based on client preferences, rather than biases.	• Content Conservatives • Average Passive • Sympathetic Guardian • Impromptu Sister
Provider Forum	Digital/mobile forum to educate, connect, and entertain providers within an online community, focused on de-stigmatizing methods, normalizing contraception for youth, and addressing myths.	• Content Conservatives • Average Passive • Sympathetic Guardian • Impromptu Sister
Seen Doing Well	A system to reward providers based on the quality of services and interactions with young clients.	• All segments

Assessment of prototypes and next steps

From October 2017 to January 2018, YLabs conducted rough prototyping sessions with 97 healthcare providers and 22 youth (and a few mothers-in-law) in Tanzania, Pakistan, and Burkina Faso to assess the potential impact, desirability, and feasibility of the seven solution concepts.

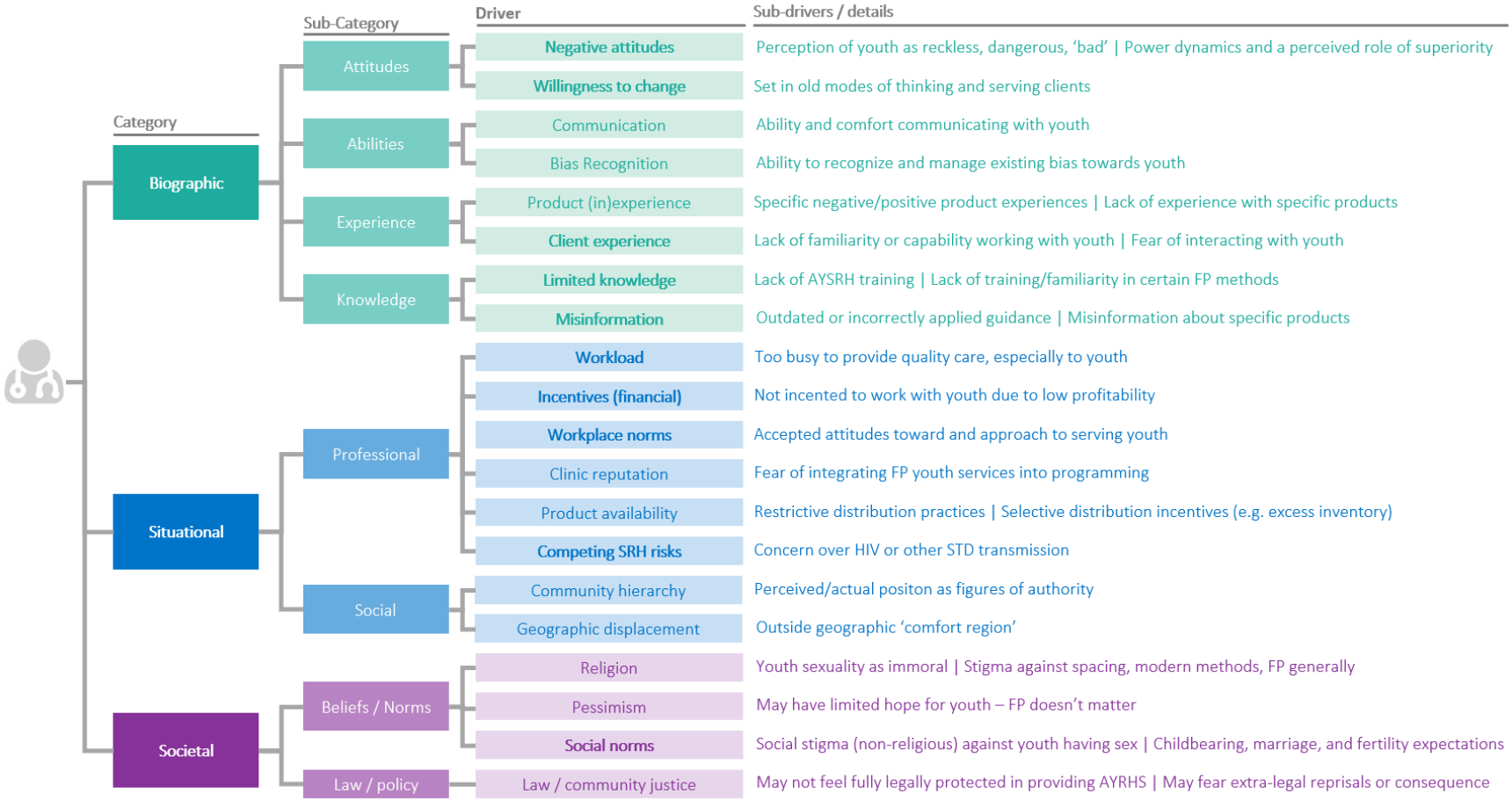
Through rough prototyping, a method in the human-centered design process, a small number of essential questions about desirability and feasibility were tested for each concept with the most minimal materials possible. Rough prototypes are used to fail early and learn directly from users to foster rapid iteration. The key goals of rough prototyping are to:

1. Develop a clear understanding of which solution concepts are desirable to our users (providers and/or youth clients) and why.
2. Identify the changes that need to be made to the prototypes to improve their desirability and impact on reducing provider bias.
3. Generate new ideas, if necessary, that better meet user needs and better target the drivers of provider bias in the target country context.

The next stage of the project will select a subset of the rough prototyped concepts for each country based on the impact potential, user desirability, and basic feasibility to advance to the live prototyping stage. The goals of live prototyping are to develop and test high-fidelity prototypes where users have as close to a "real" experience as possible and offer feedback for refinement. Following the live prototyping are the implementation and evaluation phases of the project, where Pathfinder will implement final solutions in all three countries with evaluation by BERI.

Appendix

Appendix 1: Provider bias driver tree



Appendix 2: Survey question to driver mapping

(Note: The below list of questions is not the comprehensive list of survey questions, but only those that directly map to drivers. The survey included a variety of additional questions including those to capture provider attributes and those to conduct the conjoint analysis)

Driver Category	Driver Sub-Category	Drivers	Definition	INCLUDED QUESTIONS				
Biographical	Attitudes	Negative Attitudes	May view sex as dirty/wrong; may have generally positive or negative views on youth.	03.01.24 - Sex is part of healthy life for young people	03.01.17 Young people should all receive contraceptive counselings, whether they are having sex yet or not.	3.01.05 Young people today have no modesty when they talk about sex.	3.01.01 Young people today are ambituous and motivated.	3.01.23 I enjoy working with young clients in general
		Empathy	Provider understands and empathizes with youth	3.01.2 I am close to a young person who had a serious health problem after a pregnancy.	4.19.29 It really upsets me when a young person has an unplanned pregnancy	4.19.08 Adolescent girls tend to need the same FP method (s)	4.19.14 I find myself thinking about my young clients after their visit.	4.19.10 I usually know what a young client needs as soon as they come in.
		Motivation	What motivated provider to become a provider and to keep providing? How motivated is the provider to try new approaches and solve challenges?	4.19.15 I spend a lot of time thinking about how I could have prevented mistakes at work.	4.19.09 Training often takes up too much time compared to the value it offers my work			
		Power Dynamics	May be unmotivated with clients perceived as lower status clients	4.02: How would you described the economic status of the adolescents you treat, in general?	4.09 How much information do you believe adolescent girls need regarding their family planning options?	4.19.21 Young, poor clients tend to have difficulty making their own FP choices as compared to young middle class clients.		
	Experience	Product Experience	Specific negative or positive product experiences; lack of experience	6.01 Have you used any methods of Family Planning, either currently or in the past?	4.19.19 If a few young clients have a negative experience with a method, I avoid recommending that method to other young clients.	4.19.28 Young women without children should not use any product that might cause a delay in fertility once stopped		

Driver Category	Driver Sub-Category	Drivers	Definition	INCLUDED QUESTIONS			
Biographical	Knowledge	Limited knowledge or experience	Lack of knowledge in general or specific to certain FP methods	2.01 What is the highest level of education that you have completed?	2.03 What year did you start working as a healthcare provider?	04.08: How often do you counsel adolescents on FP?	
		Insufficient training	Lack of training with certain FP methods	Q2.04 When was the last FP refresher training that you participated in, if any? Q05. What was the topic of this most recent FP refresher	02.06 Have you ever participated in a training about providing FP services to adolescents? If so, when?	2.07 While working for your qualification as ____ did you receive training on providing FP to adolescent clients ?	2.08 Which methods are you trained to administer?
		Misinformation	Misinformation about specific products	4.19.25 Hormonal methods have a negative impact on adolescent's growing bodies	4.19.12 IUDs are not appropriate for women without children.		
	Talent/ability	Identity Bias	Ability to recognize and negate personal bias around clients religion, ethnicity	4.19.13 When there's a problem between a provider and a client, it's most often the fault of the client			
		Adaptability/ improvisation	Ability to quickly respond to challenges and unexpectived situations with creativity and ingenuity; ability to make things work when circumstances are aypical	4.19.18 I enjoy workdays that are different and challenging			
		Communication skills	Ability and comfort to clearly communicate services; ability to discuss FP and sexuality with young clients.	3.01.03 At times it can be embarrassing for me to discuss sex with younger clients.			

Driver Category	Driver Sub-Category	Drivers	Definition	INCLUDED QUESTIONS					
Situational	Professional	Workload and Working Conditions	Too busy to provide quality care, especially to youth	4.03: In general (not just for FP) how would you describe your workload? [read response categories and select one]	3.01.07 Young people aged 15-24 take longer to counsel on contraceptives than those aged >25 years	4.19.20 When problems come up at work, there are people who can help me.	4.19.33 I'm paid fairly for the work that I do	4.04: Currently, besides you, how many other providers in your clinic provide FP consultations?	4.19.34 Sometimes there is no power available at my workplace for hours at a time
		Incentives ($)	Not incentivized to work with youth due to low profitability	4.19.30 I prefer to provide methods that are quicker and easier to administer	3.04.04 Working with young clients makes it difficult to see as many clients as I would like	Q4.07a Do you receive an incentive for providing services specifically to adolescent or youth clients?			
		Product Availability	Restrictive or selective distribution incentives or practices	Q4.06 How often do you have stock-outs of any of the following methods?	Q4.07 Do you receive an incentive for distributing any of the following methods?				
		Risk avoidance (inc. HIV protocols)	Clinics may lack standardized training around HIV and FP integration	03.01.14 Providing contraceptives for unmarried adolescents might make them more promiscuous	4.19.28 I prefer not to provide an FP method to a client if they will not take an HIV test	03.14.15 If an unmarried youth is having sex, it is best to advise them to abstain			
		Protocol and Workplace norms	Pressures that providers feel from other colleagues	4.19.7 My colleagues and I have different opinions about what advice should be given to adolescents about FP.	4.19.23 My administration/boss supports me in providing any/all methods to adolescents	Q4.13 While counseling adolescents on FP, do you use a tool? If so, what tool?	3.01.26 I am recongized for my good work by my supervisor if I provide quality services to adolescents	4.19.35 In my workplace, the policy about providing FP services to adolescents is sometimes unclear	
		Clinic Reputation	Fear of integrating FP programming	4.19.24 Providing contraceptive services to adolescents makes me worry about my clinic's reputation in the community					
	Social	Community hierarchy	Perceived/actual figure of authority	3.01.09 As a provider, I have a responsibility to teach younger women how to behave	3.01.11 Outside my work people in my community often ask me for guidance	4.21 When working with younger clients, I most often feel like...(parent, aunt/uncle, friend)	6.04 Do you have any children, and if so how many?	6.05 Do you have any children between the ages of 15-24?	
		Geographic displacement	Outside geographic "comfort region"	4.19.04 The culture in the area I serve is quite different than where I spent most of my life					

Driver Category	Driver Sub-Category	Drivers	Definition	INCLUDED QUESTIONS					
Social	Beliefs/Norms	Religion	Belief in abstinence before marriage; stigma against spacing/FP methods	3.01.08 According to my religious beliefs it is okay for one to limit how many children they have.	3.01.10 Young girls and boys today are not as religious as they should be.	03.01.13 My religion considers it a sin for unmarried girls to use contraception	4.19.26 Certain methods are not appropriate for religious clients	6.01 What is your religion?	6.02 How often do you attend church/mosque?
		Pessimism	May have limited hope for youth - FP/services don't matter	3.01.20 If a poor girl can avoid prengancy during adolescence, she'll be able to get a well-paying job later on					
		Social Norms	Stigma against youth having sex, taboos on discussing sex with youth, norm that couples need to get pregnant very soon after getting married	03.01.12 Young couples should have children as soon as possible after getting married	4.19.22 I would provide a hormonal method to a young client even if I knew it might damage my reputation in the community.	3.01.06 Youth should be told that they should not have sex before marriage	03.01.16 Young married and young unmarried clients should have the same FP options	4.19.37 Sometimes I worry that if I provide a young client with FP, her reputation in the community will be damaged	
	Law/Policy	Law/Community Justice	May not feel legally protected while discussing sex, fear consequences	03.01.18 Unmarried adolescents require consent from their parents before contraceptives are provided	03.01.19 Young married clients require the consent of the husband before contraceptives are provided	4.19.6 Others have expressed their disapproval to me about the consultations I provide to adolescent girls about FP	3.01.21 Providing contraceptives to youth has gotten me into trouble in the past.		

Appendix 3: Burkina Faso classification tools (English version)

Beyond Bias Classification Tool Draft: Burkina Faso

Q#	Question
Q1	*Young women without children should not use any product that may cause a delay in fertility once stopped.* 01. Strongly agree **[continue]** 02. Agree **[skip to Q3]** 03. Neutral **[skip to Q6]** 04. Disagree **[skip to Q6]** 05. Strongly Disagree **[end = Detached Professional]**
Q2	*I'm paid fairly for the work that I do.* 01. Strongly agree **[end = Detached Professional]** 02. Agree **[end = Detached Professional]** 03. Neutral **[end = Detached Professional]** 04. Disagree **[end = Detached Professional]** 05. Strongly Disagree **[end = Impromptu Sister]**
Q3	*I enjoy working with young clients in general.* 01. Strongly agree **[end = Detached Professional]** 02. Agree **[continue]** 03. Neutral **[continue]** 04. Disagree **[continue]** 05. Strongly Disagree **[continue]**
Q4	*A client with just one daughter will have different FP needs than a client with just one son.* 01. Strongly agree **[continue]** 02. Agree **[continue]** 03. Neutral **[continue]** 04. Disagree **[end = Detached Professional]** 05. Strongly Disagree **[end = Detached Professional]**
Q5	*I'm paid fairly for the work that I do.* 01. Strongly agree **[end = Detached Professional]** 02. Agree **[end = Detached Professional]** 03. Neutral **[end = Detached Professional]** 04. Disagree **[end = Average Passive]** 05. Strongly Disagree **[end = Average Passive]**
Q6	*Providing contraceptive services to youth makes me worry about my clinic's reputation in the community.* 01. Strongly agree **[end = Detached Professional]** 02. Agree **[end = Detached Professional]** 03. Neutral **[continue]** 04. Disagree **[continue]** 05. Strongly Disagree **[continue]**
Q7	*How would you describe the economic status of the youth clients you treat, in general?* 01. Vulnerable or extremely poor background (0-500 CFA/day) **[continue]** 02. Poor background (500 FCFA - 1000 CFA/day) **[end = Detached Professional]** 03. Middle class background (1000-5000 /day) **[end = Detached Professional]** 04. Well-off background (5000 plus per day) **[continue]** 05. A mix, with no clear majority **[end = Detached Professional]**
Q8	*Have you ever participated in a training which covered provision of FP services to youth?* 01. Yes **[end = Detached Professional]** 02. No **[end = Average Passives]**

Appendix 4: Variable definitions of drivers of bias as applied in driver analysis

Category	Driver	Driver present if: question (response)
Biographical	Negative attitudes	Sex is part of a healthy life for young people (Strongly disagree), AND/OR Young people today have no modesty when they talk about sex (Strongly agree), AND/OR I n general, it's more difficult to work with young people (Strongly agree)
	Lack of empathy	I am close to a young person who had a serious health problem after a pregnancy (Disagree or Strongly disagree), AND/OR When there's a problem between the provider and the client, it's most likely the client's fault (Strongly agree)
	Product inexperience	Have you used any methods of Family Planning, either currently or in the past? (No)
	Lack of motivation	Training often takes too much time compared to the value it offers my work (Agree or Strongly agree)
	Limited knowledge or insufficient training	When was the last FP refresher training that you participated in, if any? (More than 1 year ago), AND/OR Have you ever participated in a training about providing FP services to adolescents? (No), AND/OR How often do you counsel youth (15-18) on FP? (Never or Rarely), AND/OR How often do you counsel youth (19-24) on FP? (Never or Rarely)
	Misinformation	Hormonal methods are safe for youth's growing bodies (Disagree or Strongly Disagree)
	Difficulty communicating	At times it can be embarrassing for me to discuss sex with younger clients (Agree or Strongly Agree)
	Provider attributes	Do you have any children age 15-24 (No), AND/OR Have you used modern methods of family planning, either currently or in the past (No)
Situational	Workload	In general (not just for FP) how would you describe your workload? (Overbooked)
	Incentives	I'm paid fairly for the work that I do (Strongly disagree)
	Risk avoidance	I prefer not to provide an FP method to a client if they will not take an HIV test (Agree or Strongly agree)
	Workplace norms	While counseling adolescents on FP, do you use a tool? (No), AND/OR My administration/boss supports me in providing any/all methods to adolescents (Disagree or Strongly Disagree, AND/OR I prefer to provide methods than are quicker and easier to administer (Agree or Strongly agree)
	Clinic reputation	Providing contraceptive services to adolescents makes me worry about my clinic's reputation in the community (Agree or Strongly agree)
	Community hierarchy	When working with younger clients, I most often feel like… (Parent), AND/OR When I provide FP services I sense my community

		disapproves (Strongly agree)
	Geographic displacement	The culture in the area I serve is quite different than where I spent most of my life (Strongly agree)
Societal	Religion	According to my religious beliefs it is okay for one to limit how many children they have (Strongly disagree), AND/OR Certain methods are not appropriate for religious clients (Agree or Strongly agree)
	Social norms	Young couples should have children as soon as possible after getting married (Strongly agree), AND/OR Young women without children should not use any product that might cause a delay in fertility once stopped (Strongly agree), AND/OR Sometimes I worry that if I provide a young client with FP, her reputation in the community will be damaged (Agree or Strongly agree)

Appendix 5: Definitions of attitudinal and behavioral bias applied in driver analysis

Category	Bias outcome	Bias present if: question (response)
Attitudinal	Low attitudinal	I enjoy working with young clients in general (Disagree or Strongly disagree), AND/OR Providing contraceptives for unmarried young people may make them more promiscuous (Strongly agree), AND/OR Young married and young unmarried clients should have the same family planning options (Disagree or Strongly disagree), AND/OR Contraceptive methods are more appropriate for women over age 25 (Strongly agree), AND/OR For FP consultations, it's important to know if the client is married or unmarried (Strongly agree), AND/OR I feel comfortable providing FP services to an unmarried client who is about to get married (Strongly disagree), AND/OR Young people are not capable of choosing the best method for them (Strongly agree)
	High attitudinal	As a provider, I have a responsibility to teach younger people how to behave (Strongly agree), AND/OR It's important for me to help youth understand when their actions are immoral, irresponsible, dangerous (Strongly agree), AND/OR IUDs are appropriate for young women without children (Strongly disagree), AND/OR Young clients may need to be punished for bad behavior (Agree or Strongly agree)
Behavioral	Low-quality service	When I'm giving a FP consultation, it's ok for another provider to come into the room (Strongly agree), AND/OR Young married clients require the consent of the

		husband before contraceptives are provided (Strongly agree), AND/OR Unmarried youth client require consent from their parents before contraceptives are provided (Strongly agree), AND/OR Young clients should be told that they should not have sex before marriage (Agree or Strongly agree), AND/OR
	Decline service due to age	If I decide not to provide a youth client with a certain method, it can be because (too young)
	Decline service due to parity	If I decide not to provide a youth client with a certain method, it can be because (no/not enough children)
	Decline service due to marital status	If I decide not to provide a youth client with a certain method, it can be because (unmarried)
	Refuses to council on modern methods	For all scenarios presented, indicates it is not appropriate to counsel on modern methods