

ADOLESCENTS 360 Formative Design Research Protocol

ETHIOPIA
2016

1. GOALS OF THE STUDY

The Adolescents 360 (A360) project will use a developmentally and anthropologically informed, youth participatory user-centered design process to create high-performing adolescent sexual and reproductive health (ASRH) programs at scale. Formative research is a key component to launch this process. This research is necessary to generate insights into adolescents' lives that will guide and center the development of prototypes for supporting adolescent girls to voluntarily access modern contraception. The research process will be exploratory, combining practices from the fields of ethnography, design, and youth participatory action research in order to engage early-on with the girls and young people the project aims to reach.

This qualitative formative design research follows audience segmentation research conducted by Kantar Group and Catalyst Behavioral Sciences in Ethiopia and southern and northern Nigeria that identified specific segments of women aged 15-30 based on identified drivers of behavior in each geography¹. Findings from the segmentation research, which was quantitative, will be used to support the identification and engagement of adolescent girls and young women in the conduct of this formative research in order to provide further context and meaning to the interpretation of the audience segments and behavioral drivers identified through the earlier segmentation research.

PSI leads this research, in collaboration with the Center on the Developing Adolescent at University of California Berkeley, IDEO.org, and youth partners from the communities where data will be collected in order to strengthen reproductive health services for adolescents in Ethiopia.

2. RESEARCH OBJECTIVES

Integrating perspectives from youth participatory action research, developmental science, human-centered design and socio-cultural anthropology, this research has the following objectives, incorporating a range of specific questions. This research aims to:

- Explore cultural understandings of the meaning of puberty, sexual debut, marriage, contraceptive use, sexuality, childbearing, and maturity and adulthood that influence the contraceptive motivations, emotions, cognitions, and behavior of adolescent girls
- Map adolescent girls' trajectories of sexual and reproductive life, beginning with puberty, moving into sex, childbearing, marriage, and fertility, and identify contextual meanings attached to each
- Explore roles that key influencers in youths' lives play in youth decision-making processes and in youth engagement with health services
- Build empathy and trust between adult researchers and youth peers to support later design work on prototyping models
- Build the capacity of young women and young men in the community to meaningfully engage in research

¹ The Bill and Melinda Gates Foundation. Choosing health: Segmentation of poor women and girls by their motivations and barriers to healthy sexual and reproductive behaviors, 2015, Seattle, Washington.

- Build the capacity of professional partners to meaningfully engage youth in informing, conceiving and designing the programs and services aiming to serve them

3. COUNTRY/HEALTH CONTEXT

Adolescent girls and young women in Ethiopia face a number of reproductive health-related challenges, many of which (such as early and unintended pregnancy) result from high unmet need for family planning.² According to the 2011 Ethiopian Demographic and Health Survey, 27% of married women used a form of modern contraception while 26% of eligible women expressed an unmet need for family planning, indicating a significant scope for expanding access to contraception. Mean age at marriage and mean age of sexual debut were almost equivalent, at 16.5 and 16.6, respectively, suggesting that Ethiopian women tend to marry during adolescence and that for large proportions of Ethiopian women, marriage and initiation of sexual activity are closely linked.³ Access to quality sexual and reproductive health (SRH) information can be challenging, and parent-child SRH communication tends to be quite limited.⁴

Ethiopia's federal government is committed to supporting youth development, particularly as ASRH policies and programs have supported progress on MDG 5. However, resources are limited.

4. SUMMARY OF PROGRAM:

Adolescents 360 is a four-year project led by PSI, with a \$30 million investment from the Bill & Melinda Gates Foundation and the Children's Investment Fund Foundation. The project aims to develop innovative approaches for designing programs for improving the sexual and reproductive health of adolescent girls, primarily through increasing use of voluntary modern contraception. PSI and partners will develop a program design process that brings together social marketing, user-centered design, developmental neuroscience and meaningful youth engagement in Ethiopia, Tanzania and Nigeria. Using this approach, Adolescents 360 will generate insights about how adolescents think and feel in each country and cultural context and develop solutions with adolescents that provide them with quality, affordable, and voluntary contraceptive information, counseling, products, and services. Throughout, the project consortium will apply an anthropological lens that allows the team to understand how the interplay of adolescent development (biological, cognitive, social, emotional, and sexual), youth culture, and sexual norms affect ASRH behavior in specific cultural contexts, and apply that understanding to the models that are developed.

² Muntean, N., Kereta, W., & Mitchell, K.R. (2015). Addressing the Sexual and Reproductive Health Needs of Young People in Ethiopia: An Analysis of the Current Situation. *African Journal of Reproductive Health*, 19(3): 87-99.

³ Central Statistical Agency [Ethiopia] and ICF International. (2012). Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.

⁴ Dessie, Y., Berhane, Y., & Worku, A. (2015). Parent-Adolescent Sexual and Reproductive Health Communication Is Very Limited and Associated with Adolescent Poor Behavioral Beliefs and Subjective Norms: Evidence from a Community Based Cross-Sectional Study in Eastern Ethiopia. *PLoS One*, 10(7): e0129941. doi: 10.1371/journal.pone.0129941

Adolescents 360 will consist of five phases, in addition to bridging activities that will span the project's four years, as outlined in Figure 1.



PSI and partners will launch the inspiration phase by month four. During this phase, the consortium, together with local partners and stakeholders, will conduct formative research that marries design thinking and youth participatory action research to: (1) gain in-depth understanding of adolescents' needs, barriers, and motivations to use contraception; (2) develop key insights into their lives, hopes, and desires; and (3) identify their key influencers. Research will be conducted with parents, health providers, young men, and other adults who serve as influencers, to facilitate a cultural analysis of how youth sexuality, puberty, and transitions into adult roles are conceptualized. This phase culminates with consortium members coming together to generate insights from the research through several rounds of data analysis and interpretation including youth peers.

In the ideation phase the consortium, together with local partners, adolescents, parents, providers, influencers, and policy makers will use findings from the inspiration phase to develop culturally salient prototypes grounded in the local context that seek to overcome identified barriers, to increase voluntary use of contraceptives as well as meet the specific HIV/STI needs of the target population.

The Adolescents 360 program in Ethiopia will be implemented in seven regions, including Addis Ababa, Amhara, Oromia, SNNP, Tigray, Diredawa and Hareri.

5. RESEARCH CONTEXT AND SIGNIFICANCE

Despite available, if scant, evidence, much more context is indeed in order to design adolescent sexual and reproductive health solutions with Ethiopian adolescents. A number of studies from specific regions of the country are available to report on highly specific aspects of sexual and reproductive health, such as youth exposure to explicit sexual images or the prevalence of premarital sex among university students.^{5,6,7,8,9}

⁵ Habesha, T., Aderaw, Z., & Lakew, S. (2015). Assessment of Exposure to Sexually Explicit Materials and Factors Associated with Exposure Among Preparatory School Youths in Hawassa City, Southern Ethiopia: a Cross-Sectional Institution Based Survey. *Reproductive Health*, 12: 86. doi: 10.1186/s12978-015-0068-x.

However, most are quantitative in nature and lack the meaningful engagement of adolescents and young people in research implementation and meaning-making. As such, the current body of evidence is not sufficient for designing youth-led solutions that are fit for the socio-cultural context in which they will be embedded. There is a critical need for research that is carried out and analyzed in collaboration with adolescents and young people to ensure that their voices and perspectives are included, and that the insights generated are relevant to and resonant with their lives and experiences. Given the country's diversity, it is also critical that insights generated from and with adolescents can be interpreted in light of key elements of Ethiopia's broader, yet complex socio-cultural context.

A key jumping-off point for this formative design research is a recent, nationally representative survey of relatively poor Ethiopian women, ages 15-30, commissioned by the Bill and Melinda Gates Foundation and conducted by the Kantar Group and Catalyst Behavioral Science (REF report here). This research (n=993) has identified two specific segments of low-income women in Ethiopia and has identified that specific drivers of behavior are associated with the practice of reproductive health behaviors including age of sexual debut and use of modern contraception. Both of these segments are present within Adolescents360's target population of adolescent girls ages 15-19, although the study sample was sample (n=384). Girls who are younger, not married and have no children are likely to fall within the 'Hiwot' segment. For young women in this segment who are using modern contraceptives their environment – ready access to enabling products and services - is the primary driver, and goals - beliefs that healthy actions have significant value for Hiwot herself and/or her family – are the secondary driver. Slightly older, married girls with children are likely to be in the 'Tigist' segment, and we expect that this is a smaller proportion of the overall Ethiopian adolescent population. For girls in the Tigist segment, use of contraceptives is driven primarily by agency - perceived and actual experience of autonomy - and secondarily by environment. These measures of goals, agency and environment has robust psychometric properties, but the meaning and context behind these concepts requires further exploration and interpretation, a key goal of this formative research with the girls themselves. These cross-sectional measures also are unable to explore the developmental trajectories of these levers and behaviors which will be explored in this project.

6. RESEARCH DESIGN AND PROCEDURES

This formative design research is framed to combine core elements of several qualitative research and insight generation processes, namely: 1) youth participatory action

⁶ Teferra, T.B., Erena, A.N., & Kebede, A. (2015). Prevalence of Premarital Sexual Practice and Associated Factors Among Undergraduate Health Science Students of Madawalabu University, Bale Goba, South East Ethiopia: Institution Based Cross Sectional Study. *The Pan African Medical Journal*, 20: 209. doi: 10.11604/pamj.2015.20.209.4525

⁷ Menna, T., Ali, A., & Worku, A. (2015). Effects of Peer Education Intervention on HIV/AIDS Related Sexual Behaviors of Secondary School Students in Addis Ababa, Ethiopia: a Quasi-Experimental Study. *Reproductive Health*, 12:84. doi: 10.1186/s12978-015-0077-9.

⁸ Geleto, A. & Markos, J. (2015). Awareness of Female Students Attending Higher Educational Institutions Toward Legalization of Safe Abortion and Associated Factors, Harari Region, Eastern Ethiopia: a Cross Sectional Study. *Reproductive Health*, 12(19). doi: 10.1186./s12978-015-0006-y.

⁹ Bilal, S.M., Spigt, M., Dinant, G.J., & Blanco, R. (2014). Utilization of Sexual and Reproductive Health Services in Ethiopia—Does it Affect Sexual Activity Among High School Students? *Sexual and Reproductive HealthCare*, 6(1): 14-18. doi: 10.1016/j.srh.2014.09.009.

research; and 2) design research developed by IDEO.org as part of their human-centered design process.

Participatory action research (PAR) is defined as ‘a systematic inquiry, with the participation of those affected by the issue being studied, for the purposes of education and taking action or affecting social change’.¹⁰ PAR classically involves members of a community in all stages of the research design, implementation, analysis and dissemination^{11,12} to identify solutions with the community in a manner that enables engagement and commitment to the action steps identified through the research process. YPAR refines this concept to specifically acknowledge the important of engaging with youth as partners and collaborators in research that touches on young people’s lives. YPAR is intended to acknowledge and surface the power differences between youth and adult researchers and research participants in order to foster more respectful and meaningful youth engagement.¹³

Design research, termed inspiration in the process IDEO.org uses, is intended to be a highly practical way to gain access to and engage with an interventions’ audiences, in order to begin to put these people at the center of the design process.¹⁴ The methods of data collection used tend to be qualitative and are designed to provide a window into people’s lives, from which meaningful insights can be generated as the first step in design.

Several core principles bring together these two disciplines:

- Establish empathy with research participants
- Listen to, value, and respect research participants
- Co-create understanding and insight with participants
- Iterate and adapt in the field, based on joint learning

YPAR and design research will inform this study’s field procedures. However, also critical to the framing of this research is that it will be informed by analytical lenses from socio-cultural anthropology and from development neuroscience that will be deployed during a period of analysis and interpretation. The data analysis portion of this research will also maintain tenets of YPAR in engaging with youth researchers to identify relevant themes and support interpretation.

6.1 Study staffing

To support meaningful youth engagement in this research, we will recruit and train a set of youth researchers in each of the three locations where data will be collected. Youth

¹⁰ Green, L.W. & Mercer, S.L. (2001). Can public health researchers and agencies reconcile the push from funding bodies and the pull from communities? *American Journal of Public Health* 91:1926-1929.

¹¹ Sullivan, M., Bhuyan, R., Senturia, K., Shiu-Thornton, S., and Ciske, S. (2005). Participatory Action Research in Practice: A Case Study Addressing Domestic Violence in Nine Cultural Communities. *Journal of Interpersonal Violence*, 20: 977 – 995.

¹² MacDonnell, J. A. (2014). Enhancing our Understanding of Emancipatory Nursing: A Reflection on the Use of Critical Feminist Methodologies. *Advances in Nursing Science*, 37(3): 271 – 280.

¹³ Suleiman, A. B., Soleimanpour, S., & London, J. (2006). Youth action for health through youth-led research. *Journal of Community Practice*, 14(1–2), 125–145.

¹⁴ The Field Guide to Human-Centered Design. (2015). IDEO.org. Retrieved from <http://www.designkit.org/resources/1>

researchers will be identified by PSI/Ethiopia's local partners in the three sites according to the following criteria:

- Women and men aged 18-24
- Conversant with the local language and cultural context of the study population
- Minimum facilitation skills with peers, (evidence of previous facilitation of peers same age and/or slightly younger)
- Minimum school education attainment of Grade 8, able to write notes and read clearly
- Should have lived on the same community for the past 3 years
- Actively participating in community youth activities / youth clubs
- Enthusiastic to contribute to their communities
- Responsible and reliable
- Some command of English

Between 3-6 youth researchers will be identified in each location, with an aim to recruit a gender-balanced set of youth researchers. They will be asked to participate in all research activities identified by this research proposal after taking part in the study's research training with other researchers. At the close of this research process, youth researchers will be asked by the project team if they are interested in continuing to collaborate with Adolescents 360 through other phases of the project.

Youth researchers will collaborate with the field research teams in each site managed by a lead field research coordinator from PSI/Ethiopia. Field research coordinators will report to a centrally located study management team at PSI/Ethiopia's office in Addis Ababa, led by the Ethiopia-based study co-investigators. All co-investigators will be responsible for overall study oversight and quality assurance.

Per site field research teams will consist of youth researchers (3-6 people), program and research staff from PSI/E (up to 4 people, members of the core A360 PSI project team (up to 3 people), and staff from IDEO.org trained in design research (up to 2 people). This staffing is inclusive of the field research coordinator from PSI/E and a skilled translator. Field research teams will all receive the same training in the research process, A360's goals, human-centered design, YPAR, research ethics, and the specific procedures of this study.

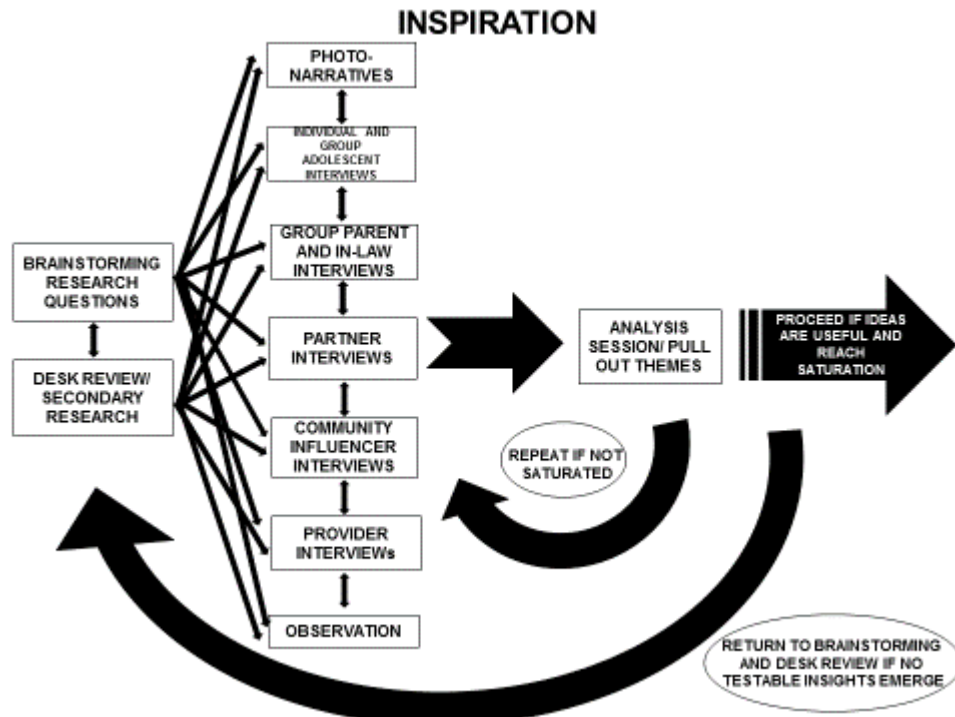
6.2 Procedures

The overall inspiration process guiding this research and thus our specific study procedures is shown in Figure 2. Figure 2 describes the iterative process by which field research teams on the ground during field work will cycle through selection and fielding of a defined set of data collection tools, while enabling flexibility and responsiveness to insights gathered next-to real-time from study participants. This iterative process is necessary to the practice of design research and YPAR in order to create empathy between researchers and study participants and to foster a meaningful degree of youth engagement during the research process.

During the training workshop to launch this study, also termed a bootcamp, field research teams will begin with a review of study objectives and work together to rearticulate the over-arching objectives into specific research questions for the sites in which they will be working. This process will be supported by a desk review of available data on Ethiopia's ASRH situation and a review of best practices in ASRH prior to beginning fieldwork (see Appendix 1 research workplan).

Once teams arrive at their site, they will spend two weeks collecting data. The late afternoon of each day will be spent in preparing for the next day's field work and de-briefing on key learnings from data collected that day. Field research teams will decide in that de-briefing session how to enact participant recruitment processes for the next day's field work and which specific data collection methods to use. IDEO.org staff will support this decision-making process, while the field research coordinator from PSI/E will oversee the logistics of travel, arranging interview sites and contacting participants.

Figure 2. Design research process for inspiration



6.2.1 Photo-narratives

In each location, we will work with a local partner that brings together adolescent girls in a safe space. We will provide 5 girls with a camera and some basic training in how to use it. We will ask them to spend one full day taking photographs of their daily activities and completing specific tasks to build photo-narratives.

After girls have completed their day of photography, a member of the field research team will meet with the girls at the office of the local partner organization. The girls will be asked to keep their best images. These will be printed, and the girls will be asked to organize these photographs onto a story-board. The research team will then ask the girls to tell a story about the images. Researchers will also record key points and quotes from the girl onto to Stickies to describe the photo-narrative (see Appendix 2 Research Guide for Girls).

Girls will be instructed to avoid photographing faces or other identifying information. Final images will not be shared beyond the core research team without de-identification of the images.

6.2.2 Individual and group interviews with adolescents

Girls who developed photo-narratives and other girls and boys who have been recommended by local partners will also be asked to participate in in-depth interviews lasting not more than one hour. These interviews will occur at the office of the local partner or another private location. Individual interviews will be conducted for insights into individual girls' and boys' lives and worldviews. These interviews will also be used to classify girls into segments as 'Hiwots,' 'Tigists,' or other girls at the end of the interview (see section 7.2). Equal numbers of interviews will be conducted by youth and adult researchers in the local language, and interviews will be conducted by members of the same sex. If the adult researcher is not able to speak the local language, a translator will be assigned.

Single sex group interviews will be conducted to understand how adolescents perceive adult expectations and norms related to sex, relationships and contraception and how those perceptions influence adolescents' decision-making processes. Integrating participatory action research strategies, youth will be involved in developing the research questions and conducting the interviews. Group interviews will be jointly facilitated by a youth and adult researcher, and another member of the research team assigned to be a note-taker. If the adult researcher does not speak the local language, a translator will be assigned. The content of these interactions and specific data collection exercises are shown in Appendix 2 Research Guide for Girls and Appendix 3 Research Guide for Boys.

6.2.3 Group interviews with parents and in-laws

Researchers will also hold group interviews with parents and in-laws. Interviews will be held in a location convenient for community members. Parents and in-laws will be asked about how they communicate with their children about sexual activity, decision-making on getting married, contraception, and how parents view the role of adolescents in Ethiopia's rapidly changing society. They will also be asked how they perceive their role as parents transitioning across the course of adolescents. Parents and in-law dialogues will be facilitated by sex-matched members of the research team, with an adult as the lead interviewer and a youth researcher as the secondary interviewer. A member of the research team will serve as note-taker. Interviews will be conducted in the local language, with a translator assigned if the adult researcher requires translation. These interviews will last 60-90 minutes. The content of these interactions and specific data collection exercises are shown in Appendix 4 Research Guide for Mothers/Mothers-in-law and Appendix 5 Research Guide for Fathers/Fathers-in-law.

6.2.4 Individual interviews with partners (boyfriends/husbands)

Boyfriends, romantic/sexual partners and husbands of adolescent girls will be important to speak to as well. The field research teams will conduct a limited number of individual in-depth interviews (not more than 5 per site) with men who have been identified as having relationships with adolescent girls that involve sexual activity, whether in a legally sanctioned marriage, in an unmarried romantic relationship, for transactional exchange, or via other parameters that will be identified during data collection. Based on EDHS data, we expect that the majority of sexual relationships that adolescent girls describe will be via marriage, but we are intentionally leaving the definition of the types of sexual

relationships this research is being designed to document open to capture any variation in these relationships. Partners will be asked how sexual activity by adolescent girls is viewed in their community, and how they view decision-making responsibilities for using contraception in intimate relationships. These interviews will be conducted by a male member of the research team. Because we anticipate that many potential partners may be older than the 15-19-year-old target population, we expect that these interviews will primarily be conducted by adult researchers (see Appendix 6 Research Guide for Male Partners). If an adult researcher is not able to speak the local language, a translator will be assigned. Researchers will be responsible for taking notes of these interviews. These interviews will last 45-60 minutes.

6.2.5 Group interview with community influencers

Key community influencers will be identified by youth researchers and by girl research participants. These influencers may also emerge from responses from individual and group interviews with youth and adults. These influencers will be invited to participate in a group interview in a location convenient for community members. Community influencers will be asked to reflect on who in their community shapes expectations about adolescents' romantic and sexual behavior and contraceptive use, barriers to youth access contraceptive use from a community standpoint; religious views, social norms, what the community values and where adolescents can seek support and services. Interviews will be co-facilitated by adult and youth researchers in the local language. If the adult researcher is not able to speak the local language, a translator will be assigned. A member of the researcher team will be assigned to take notes. These interviews will last 60 minutes. The content of these interactions and specific data collection exercises are shown in Appendix 7 Research Guide for Community Influencers.

6.2.6 Group interview with service providers

Service providers will be identified by youth researchers and by girl research participants. Providers will be anyone who provides reproductive health services known by adolescents or who provide information and counseling about reproductive health services. Providers may include public or private sector service clinical providers and extension agents as well as pharmacy staff. These providers will be invited to participate in individual interviews in a location convenient for the provider, including at their site of service provision. Providers will be asked to describe the types of reproductive health services and information they provide, and they will be asked to reflect on their values in serving adolescents and their perspectives on their responsibilities to adolescents. Interviews will be co-facilitated by adult and youth researchers in the local language. If the adult researcher is not able to speak the local language, a translator will be assigned. A member of the researcher team will be assigned to take notes. These interviews will last 60 minutes. An interview guide is shown in Appendix 8 Research Guide for Service Providers.

6.2.7 Observation

The research team, including youth researchers, will be trained to conduct unobtrusive observations of key locations where adolescent girls and boys congregate in their communities. These will be public locations and that there will be no interactions with adolescents at these locations. Observations will look for how adolescent girls and boys dress, who they interact with, whether their interactions are single-sex or mixed, their use of cell phones and other technology, when they come to a location, and when they

leave. Observations will take place in 4 hour increments. Researchers will be responsible for taking notes of these observations (see Appendix 9 Observation Guide).

6.3 Selection of procedures

During daily de-briefs at the end of each day of data collection, field research teams, including youth researchers will identify what worked well and what did not work in each day of data collection (see Appendix 10 Field Work De-brief Guide). They will review field notes and key themes, and assess what was heard, what resonated, what themes were really critical and consistent each day. These teams will then identify which participant perspectives are not yet fully represented and what data collection procedures are needed to reach those participants. The next day's research plan will be developed through group consensus, but with the field research coordinator responsible for managing logistics. Field research teams will only be able to select from the procedures listed above.

6.4 Light touch procedures in one site

To improve the ability of this research to reflect Ethiopia's diverse population and geographies, we will select one field site for a more limited data collection process (see site selection below). In this site, we will not follow the full process of youth engagement described above nor use the full range of procedures. In this site, the data collection team will consist of adult researchers from PSI/Ethiopia. Data collection will focus on individual and group interviews with adolescents. We will aim to conduct at least 10 individual interviews with boys and girls and at least 2 group interviews (n=8). If, after these interviews have been conducted, any themes emerge during daily de-briefs that align with themes identified from other study sites, the field site coordinator will not proceed with additional data collection. If specific unique themes emerge, data collection may continue until saturation has been achieved.

7. SUBJECTS AND SAMPLING

7.1 Site selection

As noted above, Adolescents360 will be implemented in seven regions of Ethiopia, including Addis Ababa, Amhara, Oromia, SNNP, Tigray, Diredawa and Hareri. Based on regions to be targeted as well as existing data from segmentation research, we have developed the following criteria to select sites to conduct this research:

- One urban area reflecting the diversity of urban Ethiopian populations
- Ability to reach the lowest wealth quintile
- One rural area to represent the North corridor near Amhara and Tigray
- One semi-urban area in the Oromia region
- Security and safety of the research team

Specific kebeles, as the smallest geographic unit of selection, have been chosen based on the presence of a local partner operating in the areas and being not more than one hour's drive from the main town in the region.

Table 1 shows the sites selected, according to these criteria.

Table 1. Site selection

Region	Woredas/Town/Sub City	Kebele
Addis Ababa	Akaki Kaliti Sub City (Saris around Zembaba Hospital)	Woreda 6
Tigray	Enderta Woreda	Dediba
Oromiya	Methara	Gelcha
Afar	Samara	Ketena 01

One kebele in the Afar region has been chosen specifically to improve the representativeness of the findings of this research and to equitably reflect Ethiopia's geographic diversity.

7.2 Target population

Adolescent girls: in each of the field sites, the research team will seek to recruit adolescent girls, ages 15-19 years-old, as the primary population of interest. We anticipate that this population will include the following groupings of girls, based on previously conducted segmentation research:

- “Hiwot”: educated adolescent girls, who have access to the appropriate products and services in their environment that enable positive outcomes. They are not yet sexually active and live with their parents in a rural area or in a dorm for school.
- “Tigist”: The second group of adolescents are older, married and have children. Their health outcomes are closely driven by their level of Agency, the level of meaningful control over their choices, particularly whether or not they go to a modern healthcare facility for SRH services and products.
- Other girls in the age group who do not easily fit into either segment, based on criteria of marital status, number of children and literacy levels.

Key influencers: in addition to girls themselves, we also plan to engage with people who are likely to be key influencers of girls' processes of identity formation, worldview and economic and social opportunities. These will include adolescent boys (15-19 years-old), parents, in-laws of married adolescents, and key community members including teachers, health care providers, Health Extension Workers, pharmacy workers, religious leaders, NGO staff, and local government officials.

7.3 Sampling and recruitment

7.3.1 Community engagement

Prior to launching data collection, PSI/E will work systematically with local government authorities to ensure that field research teams have the necessary permissions to operate in the selected study sites. PSI/E area program managers will meet with local health bureaus in the relevant regions to secure letters of support to be used when seeking permission to operate at the woreda/sub city level. PSI/E will also ask local partners to meet with the relevant health extension workers in the kebeles selected for data collection to seek their support to operate in the areas and to facilitate relationships with community leaders.

7.3.2 Recruitment of adolescents

PSI/Ethiopia will work with youth researchers and local partners in study sites to identify adolescents in the target age group. Local partners and youth researchers will be asked to identify 5 adolescent girls to begin the data collection process. Being 15-19 years-old, willing to develop a photo-narrative, and willing to participate in an interview will be the

primary inclusion criteria. We will ask local partners to identify a diverse group of girls, including girls who are students, working in their parents' homes, married, and involved in economic activity outside of the home. This study acknowledges that many study participants will be below the age of legal consent in Ethiopia. It is essential that these individuals be contacted and given the opportunity to participate in this research in order to ensure appropriate representation of the A360 target population. See below section 12 for protections governing minors.

These initial study participants will be asked to suggest other friends aged 15-19 years old, both boys and girls, who might be willing to speak to the field research team and participate in either an individual or a group interview. Inclusion criteria for adolescent boys will be that they are 15-19 years-old and agree to participate in an individual and/or group interview. Names and contact information such as address and telephone will be collected for recruitment purposes only, but this information will not be retained by the field research team, and all identifying information will be destroyed at the end of data collection. The first set of girls will be asked to contact up to 3 peers and tell them about the study. If these peers seem interested, the first girl will ask if she can give her peers' contact information to the field research team. If the peer agrees, contact information will be transferred.

Adolescent girls and boys may also be approached by the research team at the end of a period of observation, if the researcher has identified that the adolescent may have a unique or divergent perspective from data already collected, using an "extremes" recruiting approach to introduce diversity into the sample.¹⁵

The research team will continue asking for referrals of female and male adolescents to contact for individual or group interviews until the field research coordinator, in consultation with the field research team and co-investigators, determines that saturation of themes across individual and group interviews has been reached, for both sexes. We estimate that saturation of themes will be reached after three rounds of referral per site and with a maximum of 10 individual interviews each of girls and boys and after three group interviews each (n=8 participants) of boys and girls. We expect a maximum of 35 adolescents to be recruited in each site.

7.3.3 Recruitment of parents and in-laws

We will also work with local partners to identify parents and parents-in-law of adolescents in the field sites. We will ask our local partners to seek to recruit a diverse sample of parents, with a range of education levels and occupations. Inclusion criteria will be having an adolescent child aged 15-19 or having a daughter/son-in-law aged 15-19 and being willing to participate in a group interview.

We will seek to conduct at least two group interviews (n=8-10) with mothers and mothers-in-law together per site and two interviews with fathers and fathers-in-law together per site. We expect a maximum of 40 parents in each site to be recruited. More interviews may be held if the field research team determines that themes have not met saturation. Adults will be contacted to be invited to participate in a group interview in a convenient and neutral location. All efforts will be made to ensure that it is not possible for parents to surmise that their children may have participated in the study as well.

¹⁵ The Field Guide to Human-Centered Design. (2015). IDEO.org. Retrieved from <http://www.designkit.org/resources/1>

7.3.4 Recruitment of partners

We will ask local partners to leverage their existing relationships with girls and with community leader to identify men with adolescent girl partners who would be willing to speak with the research team. We will ask local partners to aim to identify a diverse range of male partners, including husbands of married adolescents, boyfriends (either in the 15-19 peer group or slightly older), and if the practice exists and is documented, men who seek transactional sex from adolescent girls. We will seek the advice of youth researchers on the types of relationships we may expect to find in each site, as these may be variable.

We will also ask girls about any romantic relationships and whether they have boyfriends or sexual partnerships with men who are older than their peer age group. We will ask the girls whether they are willing to refer these partners to the field research team. If so, we will follow the same referral confirmation process as described in 7.3.2. If the data collectors identify through interaction with a girl that there may be any element of coercion in the relationship between a girl referring a male partner and that partner, the field research team will not contact that male partner, in order to protect the referring girl's privacy.

Inclusion criteria for boyfriends and sexual partners will be that they have been referred to the study team, regardless of the man's age, and that they agree to participate in a single-sex individual interview. We expect to conduct no more than 5 of these interviews per site.

7.3.5 Recruitment of community influencers

Adolescents and youth researchers will also be asked to recommend influential people in their community to contact for group interviews with key influencers to discuss community norms and their perceptions of adolescent roles and needs. Adolescents and youth researchers will be asked to recommend influencers they trust as well as influencers who do not hold their trust. These influencers may include religious leaders, health care providers, staff at other service delivery sites such as pharmacies, teachers and others as identified. At least two group interviews with key influencers (n=8-10 per interview) will be held per site, but more interviews may be held if the field research team determines that themes have not met saturation. These interviews will include both women and men, and participants will be asked to participate in the interview in a convenient and neutral location.

7.3.6 Recruitment of service providers

Recruitment of service providers will follow a similar process as described above for community influencers. We will ask adolescents and youth researchers to suggest reproductive health service providers, including providers of information, that they are aware of in their community, whether these providers are known to serve adolescents or not. Service providers will be defined by adolescents and thus may include private or public sector services, outreach or extension agents, and pharmacy staff. The field research team will then aim to locate the service provider at their work place and arrange a convenient location for an individual interview, which will be conducted by both adult and youth researchers, with one member designated as a note taker. We will aim to conduct not more than 8 service provider interviews per site.

7.3.7 Sample size estimates

Table 2 shows estimated sample sizes in each field site of the primary and secondary target populations included in this study.

Table 2. Estimates of maximum sample sizes per site

Adolescent girl individual interviews and photo-narratives	10
Adolescent boy individual interviews	10
Adolescent girl group interviews	24
Adolescent boy group interviews	24
Parents and in-laws	40
Partners	5
Community influencers	20
Providers	8

For three field sites, we estimate to include 68 adolescents and 73 adult influencers. In the fourth field site in Afar region, where we will collect more limited data, we estimate to reach 26 adolescents. Thus, we estimate that we will reach a maximum of 230 adolescents and 219 adult influencers.

8. DATA COLLECTION AND MANAGEMENT PROCEDURES

8.1 Data collection

Before beginning data collection, the study management team will contact local government officials to secure approvals for operating in selected research sites and secure collaboration from local partner organizations, including identification of private spaces that can be used for conducting interviews. The study management team will conduct community sensitization events in the field sites as well, based on the recommendation of local partners, and will identify youth researchers doing this period.

The formal research study will kick-off with a 5-day research bootcamp conducted in collaboration with partners at the Ministry of Health. The bootcamp will cover the following content:

- Adolescent development
- Establishing meaningful youth-adult partnerships
- Creating a youth-positive research culture
- Social-cultural anthropology
- User-centered design
- Translating research methods into youth friendly concepts
- Research ethics
- Study consent procedures
- Study logistics
- Research methods (specifically observations, interviews, and photo-narratives)
- Data analysis
- Data quality
- Translating data into action

After completion of the bootcamp, field research teams will travel to research sites. Field research coordinators will be responsible for ensuring that all study logistics and materials are in place including: lodging and per diem for the research team, interview sites(s), cameras, laptop computers and power cords, flip charts, story boards, stickies, markers, and paper print-outs of data collection instruments.

Data collection will begin with photo-narratives, observations and contacting study participants who have been referred to the study team. With the exception of expert interviews, potential study participants will be contacted one time by the study team. If they are not available, the research team will move on to the next contact. Given their position in the community, candidates for expert interviews will be contacted up to three times to be invited to participate in the research.

Team debriefs at the end of the day will be an essential tool for a successful research process. These sessions will last at least one hour, and attendance at the debriefs will be mandatory for all research team members. Field research coordinators will be instructed by the study management team to document all decisions on study recruitment and specific data collection procedures to use, coming out of these meetings.

Field research coordinators will also be ultimately responsible for the quality of data collected from each field site. The study management team in Addis Ababa will be in regular contact with field research coordinators during data collection to assess the quality of data being collected, adherence to study procedures, and any likelihood of adverse events occurring. Co-investigators will plan to conduct at least one site visit to each site during the course of data collection to assess study progress and data quality.

8.2 Data outputs and management

Key data outputs from this study will include:

- photo-narratives and notes explaining the narratives, in local language and English
- notes taken during individual interviews
- pictures drawn during individual interviews, with notes of English translations
- photos of card sorts taken during individual or group interviews, with notes of English translations
- notes taken during group interviews
- photos of storyboards taken during group interviews, with notes of English translations
- notes of observations
- individual field researchers field notes
- notes of daily de-briefs taken by field research coordinators, translated into English

Data coding: In advance of data collection, the study management team in Addis Ababa will develop a code scheme for tracking individual data outputs, maintained in an Excel spreadsheet. Field research coordinators will be trained on this scheme and will be responsible for ensuring adherence to this coding scheme by members of the field research scheme. A key deliverable of data collection will be a listing of data outputs from each field site, coded appropriately, and with the code applied to each specific piece of data outputs. These outputs will then be transported to PSI/E's office in Addis Ababa and collated across all study sites.

In Addis Ababa, members of the PSI/E research team will be responsible for stripping data outputs of any remaining identifying information, and for applying a coding scheme for identifying study participants without identifiers. The PSI/E research team will also review all data outputs for clarity and the ability to comprehend data outputs. Any data outputs that are not legible or understood in either the local language or English will be reviewed by the field research coordinator and edits considered to improve clarity. If necessary, the PSI/E research team and research coordinator will contact the member of the field research team who did the actual data collection to assess the meaning of text that is not clear and to make appropriate corrections.

Paper-based versions of data outputs will be maintained in PSI/E's office in a locked office and destroyed 3 years after completion of data collection at the final site. As started below, completed assent and consent forms will be destroyed one year after data collection. Electronic versions of all data outputs will only be maintained without identifying information and kept on a password-protected computer in the PSI/E office. A copy of all electronic de-identified data outputs will also be stored electronically in a password-protected location to be determined and maintained by the A360 Learning Advisor.

Copies of electronic de-identified data outputs will be made available to members of IDEO.org and UC-Berkeley who participated in field research to enable their analysis of the data. IDEO.org and UC-Berkeley staff members will be asked to sign a PSI data use authorization form prior to the transmittal of data, which specifies how they will maintain data safety. Other members of the A360 consortium may submit a request to the A360 project director to access the data following completion of a data use form.

9. DATA ANALYSIS

Youth and adult researchers will collaboratively analyze all data outputs, which will be checked for de-identification before data analysis. Adult and youth researchers will then come together in a data interpretation workshop to identify themes and patterns emerging from the data, following a grounded theory approach.^{16,17} In addition to looking for common themes that emerge from the data, we will also look for specific statements that stand as outliers to those themes in order to assess the robustness of themes and the degree of variance from those themes.

A data interpretation workshop will be held at PSI/E's office in Addis Ababa and will be co-facilitated by an IDEO.org team member and a member of the A360 PSI team. All members of the field research team including youth researchers will be invited to participate. The study management team in particular will work to ensure that youth researchers are able to travel to Addis Ababa for this workshop. On the first day, field research teams, led by the field research coordinators, will be asked to present salient themes that have emerged from their de-briefing sessions and other opportunities for reflection. Facilitators will fill out stickie notes with themes that emerge from this session and continually hang them on a blackboard available to all workshop participants. On the next day, photo-narratives and photographs of card sorts and visual outputs from group

¹⁶ Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative data analysis*. Thousand Oaks, CA: SAGE

¹⁷ Evans, G. L. (2013). The novice researcher's first walk through the maze of grounded theory: Rationalization for classical grounded theory. *The Grounded Theory Review*, 12(1), 37-55

interviews will be hung on the wall of the workshop room, and workshop facilitators will conduct a gallery walk exercise to enable workshop attendants to review and process these outputs. Stickies will again be used to write down themes and put them on the board. Following this session, on the afternoon of the second day, adults will be asked to leave the room, except for one trusted adult identified by youth researchers, who will stay with the youth researchers and work with them to review de-briefs and visuals to identify any themes that youth researchers want to highlight. All workshop participants will re-convene on the third day to view inputs from youth researchers. At this point, the developmental neuroscience partner, followed by a socio-cultural anthropologist consultant will be asked to share reflections and to layer on themes from their respective analytical frames which have not yet been identified. The closing session of the workshop will aim to sort and combine themes in to a more aggregated framework.

The study management team will be responsible for sharing notes of the data interpretation workshop and of the framework of themes that emerged with all members of the study team. At the close of the data collection workshop, all workshop documentation will be saved onto a PSI/E password protected computer and copied to the A360 Learning Advisor for protected storage in Washington DC. Members of the IDEO.org team will also transport a copy of de-identified data outputs to their office in San Francisco for further analysis in order to refine themes and identify additional variants. This level of synthesis and refinement will be conducted in order to select ideas and options that could lead to the development of effective prototypes in the subsequent ideation of phase of A360 and is critical to the human-centered design process.¹⁸ Simultaneously to IDEO.org's sense-making process in San Francisco, the study management team in Ethiopia will continue to review and refine themes identified in the initial analysis workshop and to layer an analysis of these themes against the different cultural contexts of the regions where A360 will scale programming, in consultation with the socio-cultural anthropologist and UC-Berkeley, to identify key insights and specific perspectives on adolescent development in Ethiopia that will support prototyping. The study management team will continue to engage with youth researchers during this analysis process to ensure that themes and insights are generated in a participatory manner that privileges youth perspectives.

Members of the field research team, including the A360 Ethiopia team, select youth researchers, A360 core team, PSI/E research leadership, members from IDEO.org and partners from UC-Berkeley will come together with other A360 research and project teams in August of 2016 for a cross-country research synthesis workshop. At this workshop, the full A360 team will look for common themes that have emerged from all formative research exercises in the project countries of Ethiopia, Nigeria and Tanzania. To prepare for this workshop, the A360 Ethiopia team will develop a PowerPoint presentation with themes and de-identified quotes to report on key findings from this study. Themes and quotes from Ethiopia will be compared to those from Nigeria and Tanzania for the purpose of identifying more useful insights about the experience of adolescent girls and their access to contraception in sub-Saharan Africa. Themes from Ethiopia and the other project countries will also be analyzed from a socio-cultural anthropology lens and from a developmental neuroscience lens by workshop participants. Workshop outputs will be documented for transport to Ethiopia. Data

¹⁸ The Field Guide to Human-Centered Design. (2015). IDEO.org. Retrieved from <http://www.designkit.org/resources/1>

analysis for this study will be considered complete at the close of the synthesis workshop.

10. LIMITATIONS

This research is intended to be exploratory and descriptive and as such is not likely to be fully representative at a national level of the target population we are trying to reach, nor of the secondary influencer groups we hope to engage. However, we have included one kebele in the Afar region to improve the geographic representativeness of this research. We hope to describe key worldviews and gain insights, but it is possible that we will not be able to reach some key sub-groups, such as domestic servants, married girls with very little mobility, girls that live on the streets, who are very hard to reach. Because these groups are hard to reach, we will need to acknowledge study limitations in our ability to report on whether insights are representative of these groups.

Sexual behaviors and use of contraception can be culturally and socially sensitive topics to discuss. We may get limited data on these topics if researchers in the field are not able to build rapport with study participants. However, we anticipate that the participatory process, clear communication about respect, confidentiality and voluntary participation will enable participants to feel comfortable in sharing their thoughts and perspectives

11. RESULTS AND DISSEMINATION

Study results will be used and shared in a number of ways:

- Beginning in August 2016, the A360 program team, consisting of members of PSI, Ethiopia and IDEO.org, with support from UC-Berkeley, will begin prototyping design solutions, with insights from this research feeding directly into that prototyping process. The program team will not have access to directly identified data, but will use aggregated themes. Any direct quotes used will be de-identified.
- IDEO.org will lead the development of an insight deck, designed as a Powerpoint presentation that captures the research process, how youth were engaged in the process, and the key insights generated
- Presentations of key findings will be developed by the A360 Ethiopia team to share with women's associations and local governmental officials in the three sites where data was collected. No identifying data will be shared in these presentations.
- Regional dissemination meetings will be held in collaboration with Ministry of Health partners and key regional stakeholders in each of the three regions where A360 plans to implement – Addis Abada, Tigray and Oromiya. Local partners who supported data collection and youth researchers will be asked to plan these meetings with the PSI A360 team, and the meetings will be organized in an adolescent-friendly manner. Adolescents and young adults will be invited to participate as well to share their reactions to the findings and programmatic recommendations. A final report from the study will be developed and shared at these meeting, in collaboration with Ministry of Health partners.

- Findings from the formative research process and initial learnings from prototyping will also be captured and shared in research briefs and journal articles to support the dissemination and influence goals of A360.

12. REGULATORY REQUIREMENTS / HUMAN SUBJECTS PROTECTION

12.1 Risks and Mitigating Risks

Possible risks from participating in this research are risk of breach of confidentiality, particularly for adolescents, and risk of psychological discomfort. Regarding risk of breach of confidentiality, adolescents regardless of age will not be asked if they have directly participated in any illegal activities, such drug/alcohol use. Field research teams will not collect any identifying information from adolescents that is tied to the data. Researchers will collect names and contact information only for the purposes of recruiting participants, and this information will be destroyed at the end of data collection.

Research participants, both adolescents and adults, may experience some psychological discomfort in being asked to discuss culturally sensitive topics, such as sexual activity or the use of contraception. Research participants will be informed of this risk prior to being asked for their consent to participate, and they will be informed that they can refuse to answer any questions or stop the data collection process at any time, or even just pause for a few minutes before continuing.

Field research teams will also be trained during the bootcamp to identify whether an individual research participant is uncomfortable with the topic of data collection and to stop the interaction. Field research teams will also be trained to refer research participants to a counseling service that provides psycho-social support on matters related to adolescent reproductive health and to provide that participant with a name and phone number of the counseling service. The counseling service will provide services in all of Ethiopia's major languages.

PSI's Child Protection Policy¹⁹ will be applied and maintained throughout the conduct of this research.

12.2 Benefits

All research participants will be informed that they will not receive any direct benefit from participating in this research. However, they will be informed that their participation will support the improvement of services for adolescents in their communities, in Ethiopia and in other African countries.

12.3 Consent/Assent Process

All adolescents contacted for this research will be screened for their age before beginning any consenting process.

¹⁹ PSI Policy on Child Protection and Preventing Sexual Exploitation and Abuse. (2015). *Population Services International*. Retrieved from <http://kix.psi.org/download/attachments/16973881/PSI+Policy+on+Child+Protection+and+Preventing+Abuse+June+2015+PDF.pdf>

12.3.1 Adolescents 18 and above

Adolescents determined to be 18 and above will then be read an informed consent script by the researcher responsible for conducting the individual or group interview. The legal age of consent in Ethiopia is 18.

The field researcher administering the consent script will be matched by gender to study participants. For group interviews, consents will be administered individually before the start of the interview. Each participant will be asked to give his/her verbal consent to participate in the study, while that consent will be witnessed by the field researcher. The researcher will then be trained to sign a form indicating that the study participant has consented to participate (see Appendix 11 Informed Consent/Assent Scripts for Adolescents). See below for how signed consent documentation will be managed by the study team.

A verbal consent process is necessary for this study, because no identifying information will be collected from adolescents. A signed consent form would be a type of identifying information which would reduce the study team's ability to maintain confidentiality of the information that research participants may disclose.

12.3.2 Adolescents 15-17

According to section 8.3.5.3 of Ethiopia's National Research Ethics Review Guideline,²⁰ for research related to a sensitive topic, such as sexuality or reproduction, where obtaining consent from a parent or guardian may be problematic to the minor because of the nature of the research, assent with a waiver of consent may be applicable.

For this study, we ask for a waiver of consent for adolescents ages 15-17 due to the following:

1. The nature of the topics being discussed are sensitive. Breach of confidentiality could cause social stigma to research participants who are minors,
2. The risk due to parental interference or knowledge of the content of discussion topics outweighs the benefit of parental protection obtained through consent,
3. Obtaining parental consent may result into a breach of privacy or confidentiality due to parental expectations to learn the content of adolescent interviews,
4. Parental consent could encourage adolescents to modify their responses due to an expectation that parents will learn of the content of the interviews.

Adolescents who have been screened to be ages 15-17 will be read a verbal assent script by the field researcher leading the interview. The field researcher will ask the adolescent to provide assent to participate. The researcher administering the assent will be asked to sign a form that a study participant has assented to participate (see Appendix 11 Informed Consent/Assent Scripts for Adolescents). See below for how signed assent documentation will be collected and managed.

12.3.3 Adults

Parents, in-laws, adult partners, and community influencers will be formally consented to participate in this research. Prior to group interviews with parents and in-laws, group

²⁰ FDRE Ministry of Science and Technology. National Research Ethics Review Guideline, September 2014, 5th edition. Retrieved from <http://www.ccghr.ca/wp-content/uploads/2013/11/national-research-ethics-review-guidline.pdf>

interview with influencers, and individual interviews with partners or providers, the member of the field research team responsible for leading the interview will read the informed consent form to each study participant and provide that individual with an opportunity to ask questions. The study participant and the researcher will be required to sign the form (see Appendix 12. Informed Consent Scripts for Adults).

12.3.4 Management of consent/assent documentation

Signed consent and assent documentation will be collected by the field research team and stored in a locked box and managed by the field research coordinator. At the close of data collection in sites, field research coordinators will be expected to transport signed forms in a locked box to Addis Ababa for storage at the PSI/Ethiopia office. Consent forms will not be retained for longer than one year (365 days) from the completion of data collection.

12.4 Confidentiality and Privacy

Protecting research participants' privacy is a major goal for this study, recognizing the sensitive subject matter. Field research teams will be trained in study procedures and in research ethics to ensure they are sensitized to risks and respectful of privacy. Girls who are asked to develop photo-narratives will not be fully anonymous to the research team, because their names and contact information will be needed to schedule follow-up interactions to develop the narratives. However, after narratives are completed, contact information will be destroyed. These girls will be asked to avoid taking photos of faces to ensure that no identifying information is collected through the photo-narratives. If the girl and the youth researcher working with her determine that a photograph with a face in it is critical to the narrative, the face itself will be blacked out by research staff in the PSI/E office before sharing with any other members of the research team, named co-investigators, or A360 partners.

As previously described, all identifying information needed for recruit of study participants, whether adults or adolescents, will be destroyed at the completion of data collection. No identifying information will be collected during individual or group interviews.

Once field notes have been transported to PSI/E's Addis Ababa office, the study management team will review these outputs for identifying information and strip identifiers – personal names, organizational names, positions, phone numbers or addresses – from these outputs. The study management team will instead devise a coding scheme for participants to indicate their sex, age group for adolescents (15-17 or 18-19), and standing in the community for adults (health care provider, government official, parent, teacher), and geographic region of the field site. This coding scheme will be applied to data outputs before data analysis. Any quotes used in study outputs or shared publicly will use this coding scheme (sex, age/community standing, geography) exclusively.

12.5 Subject Compensation

Research participants will not be financially compensated for participation in this research

13. UNANTICIPATED PROBLEMS

As part of the research bootcamp, field research teams will be instructed on how to identify any ethical and safety concerns, and they will be asked to report concerns to the study management team.

Serious ethical and safety concerns may include, but are not limited to:

- Incidents when a research participant's safety is at risk because of participation in the study
- Any threats of violence to the research team while conducting the study
- Any incident where the confidentiality of research participants is jeopardized
- Any event related to the research process that results in serious injury, death or arrest (e.g. motor vehicle accidents)

The in-country research coordination team will be responsible for advising field researchers on incidents that have ethical or safety concern, or any event that may constitute a violation of this protocol. The following actions may be taken:

- Field researchers will immediately report the event to the in-country research coordination team
- Field researchers will provide complete documentation of the incident to the in-country research coordination team as soon as possible
- The in-country research coordination team will immediately share documentation of the incident with named co-investigators to this protocol
- Field researchers, the in-country research coordination team, and named co-investigators will meet to discuss the case and decide on a course of action
- The in-country research coordination team will ensure that the course of action is implemented and documented. They will develop and share a report on the course of action with named co-investigators
- An adverse event report will be developed by the in-country research coordination team and named co-investigators in consultation with field researchers and shared immediately with the PSI Research Ethics Board and with the Ethiopian Public Health Institute Institutional Review Board.

Appendices

- Appendix 1. Formative Design Research Workplan
- Appendix 2. Research Guide for Girls
- Appendix 3. Research Guide for Boys
- Appendix 4. Research Guide for Mothers/Mothers-in-law
- Appendix 5. Research Guide for Fathers/Fathers-in-law
- Appendix 6. Research Guide for Male Partners
- Appendix 7. Research Guide for Community Influencers
- Appendix 8. Research Guide for Service Providers
- Appendix 9. Observation Guide
- Appendix 10. Field Work De-brief Guide
- Appendix 11. Informed Consent/Assent Scripts for Adolescents
- Appendix 12. Informed Consent Scripts for Adults