

*Research Article*

## Entertainment Education Shows for Increased Uptake of Family Planning Services and Improved Health Seeking Behavior in Rural India

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### Abstract

Project Ujjwal initiated a 360 degree demand generation strategy (DGS) consisting of: mass media, mid- media and interpersonal communication (IPC) - to overcome barriers leading to adoption of family planning (FP) methods in Bihar and Odisha. Aim of the research is to understand the influence of these DGS on improved communication and uptake of FP methods, through Ujjwal clinics and public facilities. Client register maintained by Ujjwal clinic and HMIS data of Government of India formed the basis for tracking month-wise FP adopters. A total of 4,096 live entertainment & education (EE) and 2,700 video shows were held in two phases, across 6,700 villages of Bihar and Odisha, during March 2014 to March 2015, with a coverage of 1.35 million audience. As shows progressed, a corresponding and significant increase in uptake of clinical-FP services (*sterilisation, injectable and IUCD*) was noticed in both the states. Similar increase in uptake of sterilization and IUCD services noticed from public sector clinics. Some of show attendees sought referral coupons and availed services. Upsurge in in-bound calls to Ujjwal helpline noticed during the period of shows. A synergized media-mix linked with supply of products & services – would bring positive behaviour changes, even in rural India with high unmet need.

### Introduction

The Lancet Series on Family Planning (FP) comprises objective evidence as to why, deserves policy and programmatic support (Lancet, 2012). Addressing the unmet need of around 215 million women, is likely to be a cost-effective (Jeremy and Quissell, 2012) and smartest (PAI, 2012) investment, as by addressing the unmet need for FP, an important reproductive healthcare need is met, leading to women's empowerment and sustainable development (CEP, 2012). If all women of developing countries with an unmet need for modern contraceptives were to receive them, the cost of FP services would increase from current \$3.1 billion to \$6.7 billion (Singh et al, 2009). This is a modest increase compared to the costs of investing in other development sectors; for example, providing universal access to clean water and sanitation, globally, would cost \$114 billion per year (World Bank, 2017). Also, an analysis of multi-country study in South Asia found that women with lower fertility had improved scores with regard to household decision-making (Upadhyay et al, 2014). The FP2020 initiative gave further impetus to FP programs worldwide, where 69 governments have committed to create 120 million additional users during 2012 to 2020, and halving the world's unmet need for contraception, by 2020 (FP2020, 2013-14).

India is a signatory to FP2020 initiative, and has committed to create 48 million additional FP users, 40% of the global commitment (120 million). India will contribute significantly to the FP2020 commitment of additional users by shifting the focus from sterilization to providing a comprehensive method mix, including, promoting use of long acting methods like Intra Uterine Contraceptive Device (IUCD), particularly during the post-partum period. For creating additional users, India has identified high priority districts for monitoring FP progress and has trained 900,000 community workers (*known*

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as *Accredited Social Health Activists - ASHAs*) to strengthen the supply chain for spacing methods in rural/remote areas (Vision FP2020, 2014). State governments have been investing resources in mass & print media and in inter-personal communication.

The Government of India (GOI) is exploring the possibility of using mobile video technology for empowering ASHAs and eligible couples about FP (Vision FP2020, 2014), so as to capitalize upon existing technologies and available Inter Personal Communication (IPC) software to strengthen communication between ASHA and eligible couple. Mother and Child Tracking Facilitation Center has been set up to assess the knowledge of the providers and the beneficiaries, and to improve IPC. Development organizations are supporting GOI in development of Information Education and Communication (IEC) material to promote healthy spacing behaviors as well as resource material for FP counsellors (Vision FP2020, 2014).

Research suggests that a minimum of six exposures through different media is necessary for initiating behaviour change (Donovan and Carter 2003). Media campaigns not only impact on beliefs and attitudes but can also have a positive effect on healthy behaviors in different ways including: increasing in opportunity for learning new information; increasing the perception that an issue is important to take into account; increasing likelihood that social discussion of messages will be stimulated; and increasing the perception that a new behavior is socially expected (Donovan and Henley 2003). During 1981-1991 media campaigns have a clear effect on number of vasectomies in Brazil (Kincaid et al 2002). Media interventions (radio, television, print) improve people's knowledge and attitudes; increase discussions about FP between partners; and improve contraceptive use. International evidence showed that programs with linkages between demand-side and supply-side interventions (*for example, mass media and social franchising*) improve FP knowledge, attitudes, discussion and use (MLE, 2012).

Project Ujjwal (Palladium, 2016) was implemented in the states of Bihar and Odisha, India between April, 2013 and March, 2016 – as these two states have high unmet need for FP (36% for Bihar, 23% in Odisha); available method mix is predominantly limiting methods (89% in Bihar, 71% in Odisha); and spacing method users are overwhelmingly seeking private sector services (about 50-80%) in 2007-08 (IIPS, 2007-08). Project Ujjwal supplemented the efforts of state governments to expand the use of clinical FP methods (sterilizations, IUCD and Injectable) by bringing-in private sector into FP - to address diverse requirements of vast rural and peri-urban populations. It has adopted a Total Market Approach (TMA), wherein the efforts were directed towards expanding the market for FP products and services (Palladium, 2016).

In order to increase the number of sites providing quality clinical FP services and to motivate the couples to use them, a tiered social franchising (SF) network of more than 300 private clinics and 6,000 community-based social entrepreneurs (*Ujjwal Saathis*) were set-up in all the districts of Bihar and Odisha. The project simultaneously initiated a series of demand generation strategies (DGS), mainly in terms of live entertainment & education (EE) shows and video shows, in two phases, to overcome barriers (*lack of access to information and appropriate services, traditional gender norms that impede women's ability to adopt contraception, misconceptions; real and perceived concerns about safety & side-effects, costs, etc.*) to use clinical FP services. Figure 1 describes various demand generation strategies introduced by project, according to timeline in Bihar and Odisha states.

In this background, aim of current research is to correlate the influence of two phases of live/video EE shows on the uptake of FP services, and to specifically address the following research questions:

1. How were the mid-media (live EE and video shows) activities of project Ujjwal were received by target population (couples with unmet need for FP)?
2. Is there any association between timing of shows with the uptake of FP services from Ujjwal network clinics and from public sector facilities?
3. What is the effect of shows on the communication between the couples?
4. Is there any relationship between timing of mid-media activities on the volume of inbound calls to Ujjwal helpline?

## Intervention Development for demand & supply of FP services

**Theory of change:** Project Ujjwal's intervention design was developed through the lens of a 'theory of change', comprising four major inter-related interventions: [social franchising (SF); social marketing (SM); capacity building & quality assurance (CBQA); and demand generation]. Three interventions (SF, SM, and CBQA) were directed towards addressing the supply side factors, while demand generation intervention addressed demand side (*both supplier and consumer-led*). The assumptions underpinning the 'theory of change,' expect that the inputs of the supply-side interventions will result in the outputs of improved supply (availability, range, price and quality) of FP products and services. Similarly, the inputs of the demand-generation interventions are expected to result in the outputs of improved awareness and knowledge as well as favourable attitudes towards FP amongst the eligible couple, leading to increased demand for family planning products and services.

**Formative research on demand generation strategies:** Prior to designing the demand generation strategies, a formative research was conducted in Bihar and Odisha, during December 2013 to February 2014, to understand: the current demand and access of FP methods; prevailing myths and misconceptions with regard to FP and service use; and barriers in accessing FP services by rural couples. Stakeholders covered included: physicians of Ujjwal clinic; Ujjwal Saathis; Registered Medical Practitioners (RMP) around Ujjwal clinic; traditional and non-traditional outlets stocking FP products; Self Help Group (SHG) members; Panchayati Raj Institution (PRI) members; and community at large within a radius of 5-7 km of selected Ujjwal clinics. Findings of formative research formed the basis for designing the content and messages of the DGS of project Ujjwal. As part of DGS, it was decided to use a comprehensive 360 degree behaviour change communication strategy to inform, persuade, and engage eligible couples to use contraceptives.

**Demand Generation Strategies (DGS) adopted:** A four pronged DGS was adopted by project Ujjwal for creating demand for clinical contraceptives:

1. **Facility level strategies:** Created a branded network of around 300 private Ujjwal clinics to provide quality clinical FP services at affordable price. Mobilized public private partnerships (contracting-in) through 955 Fixed Day Services (FDS) at 120 public health facilities, by private outreach teams. Conducted around 1000 FDS at Ujjwal clinics, to provide quality clinical services to poor couples, free of cost. Created a network of 5,000+ women entrepreneurs/Ujjwal Saathis (15-20 per clinic) to mobilize clients to Ujjwal clinics as well as to FDS.
2. **IPC at individual level:** Under IPC at individual level, the Ujjwal Saathis were trained to provide need and method specific client counseling and mobilization; myth busting; safety and side-effects of different FP methods; and costs. Various IPC tool kits (*mobile SD cards for method specific education films, frequently asked questions book*) were created and supplied to Ujjwal Saathis. An Ujjwal Helpline was set up to answer questions of potential clients and to do follow-up of FP service adopters.
3. **Mass media:** As part of mass media interventions: 12 doctor's films (of 2-3 minute duration) featuring local eminent doctors were developed according to FP methods - for use by Ujjwal Saathis and Ujjwal clinics. Eleven role model films (*real stories of 3 minute duration featuring stories of positive deviant couples from Bihar and Odisha who have adopted the contraceptive method, reasons for use and their perceived benefits of use*) were developed. Entertaining films: 8 minute long soap opera format fictional films revolving around the contraceptive method featuring the socio-cultural barriers and the pathway to use for a contraceptive method and television advertisements featuring the contraceptive method were also developed. All these films were kept in method wise folders of SD cards and were given to Ujjwal Saathis.
4. **Mid media/entertainment education (EE) shows:** The EE shows were held in the villages of Bihar and Odisha in two phases [in first (2014) and second (2015) year of intervention] using flock show and video show as the mediums of communication. During March-July, 2014 (phase 1) and December 2014 to March 2015 (phase 2) - 4096 live EE shows, 2700 video EE shows were held in the two states.

**Planning and designing of EE shows:** These shows were designed to create awareness and to initiate dialogue within the community. By incorporating the use of drama and comedy elements, street theatre artists tried to engage audience on FP subject, around which discussion was traditionally blocked by social and cultural taboos. The show introduced audience to available clinical methods of contraception, with a special emphasis on long term spacing (IUCD and Injectable) methods and safe abortion services. Introduced methods were linked to possible sources of information/services/products (Ujjwal Saathi, Ujjwal Clinics, Ujjwal Helpline, Ujjwal Outlets). The shows were performed by professional theatre troupes in front of live audience (large open ground in village). Drawing lessons from the formative research conducted on the topic, Project Ujjwal developed the script, scenery and protocol for the shows. Theatre troupes (consisting of 6-7 men/women in the age group of 25-35 years) from respective states were selected and trained on the delivery of the script. For conducting a show in a village the troupes required around two hours' time, although, duration of actual show was one hour fifteen minutes. The troupes customized the script to the dialect to the area of performance to increase comprehension and interactivity (Photo 1). Target audience of these EE shows were couple with unmet need for clinical contraceptives (photo 1) in rural area.



**Photo 1: Entertainment and Education live show**

**Planning and designing of Video shows:** Video shows were designed to reinforce messages delivered by live shows and to address any lingering questions by potential users, who otherwise may be interested in adopting contraceptive method, but were yet undecided. Separate videos were developed on the topics of unwanted pregnancy, injectable contraception and IUCD with information about effectiveness, benefits and side-effects of the methods provided by physicians and with a scope for the facilitator of the show, to initiate discussion with audience and to answer the questions from the audience. The persuasive audio-visual content helped to bolster the argument for FP (photo 2). The familiar setting was an ideal space for discussions on dispelling myths, misconceptions, and foster information-seeking behaviour. Video shows were conducted by a group of 3-4 (with at least one female moderator) people and required one hour time to conduct a show in a village. Video vans with a 32 inches size television set, a generator and audio-visual content traveled to villages and conduct the shows.



**Photo 2: Video show**

**Execution of EE shows:** The live/video shows were mainly performed in rural parts of Bihar and Odisha. Bihar and Odisha had a population of 104 and 42 million respectively, in 2011 - out of which 89% and 83% of the population reside in rural areas. The purpose of live/video shows was to create demand for clinical FP services from Ujjwal network clinics, and hence, these shows were planned and executed around the catchment area of 'Ujjwal clinic'. An average of 15 live/video shows were held per clinic, within a radius of 5-10 kilometers from each of the Ujjwal network clinics, assuming this radius to be the 'catchment area' of the clinic. The list of villages (catchment area) for performing live/video show were finalized after consulting owners of each Ujjwal clinic. During the shows audience were also be introduced to: Ujjwal Helpline; services offered by Ujjwal Saathi; nature and cost of clinical FP services at Ujjwal Clinics and FDS at Ujjwal clinics; availability of IUCD and sterilisation services from public facilities and public facility FDS; and availability of socially marketed spacing contraceptives and sanitary napkins from Ujjwal outlets in the village.

**Hypothesis:** It is hypothesized that live/video shows along with other DGS introduced by the project Ujjwal would create demand for clinical FP services at Ujjwal clinics. It is also hypothesized

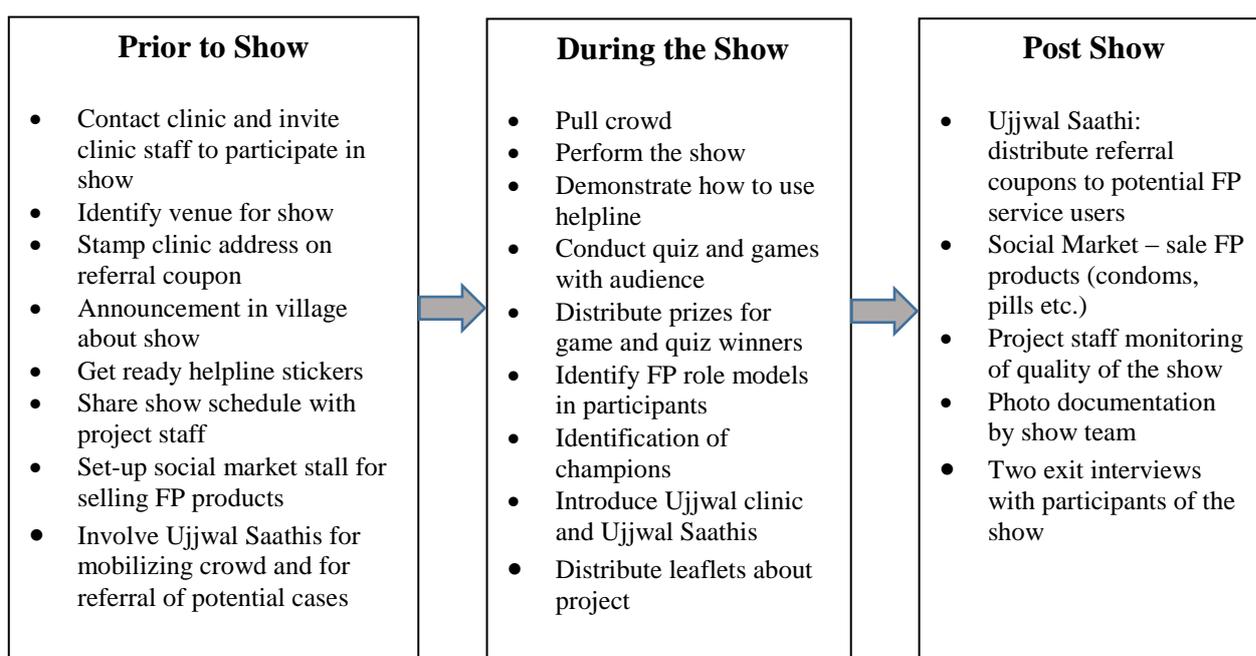
that the influence of the shows will also be reflected in demand for clinical FP services from public facilities, as the messages (of the show) were integrated with the story that has a strong link to all the available services (both private sector and public sector) in the vicinity of the village. Project Ujjwal also conducted FDS for sterilisation and IUCD at public facilities.

## Methods

**Ethical clearance:** Ethical clearance of the study was obtained from the research and ethics committee of the Futures Group, India. Verbal consent was obtained from head/influential person of the village for performing live/video show, and to conduct exit interviews with potential couples.

**Checklists:** In order to ensure standardization in conducting and monitoring the shows different checklists were used. Checklists were developed to capture information on these three areas: activities prior to the show, during the show and post-show. Box 1 summarizes these activities.

### Box 1: Checklist of activities performed by troupe members, for each show



Each live/video show was monitored by the using the following two types of checklists:

**1) Show monitoring checklist:** This checklist was collected by project Ujjwal staff (DGS coordinator and/or Ujjwal Saathi and/or outreach officer and/or coordinator) who is independent of the troupe conducting the show. The checklists consists of: date of the show; approximate number of audience present at the show; stakeholders' presence (Ujjwal Saathi, Ujjwal clinic staff, village leaders, ASHA, AWW and SHG member) at the show; number of leaflets, Ujjwal helpline stickers and referral coupons distributed; role model couples (who successfully adopted FP method by overcoming the difficulties) identified or not; village champions (who are willing to promote/educate peers in accepting/convincing potential clients) identified or not; three exit interviews (reproductive age group women who have not adopted sterilisation) conducted or not; helpline introduced or not; logistic arrangements done for successfully conducting the show; etc. Using this data: districts, village, clinics covered by the shows, mean shows per clinic, total audience, reproductive age-group audience, mean audience per show, percent of shows with presence of different stakeholders, etc. – indicators were measured. This checklist was also used for compiling distribution of: referral coupons, project Ujjwal leaflets and the number of helpline stickers posted per village.

**2) Exit interviews with two-three potential users of FP per show:** These interviews were conducted by one of the members of the show with non-adopters of sterilisation, on: feedback on the

content and format of show; awareness about primary messages given by the show; resemblance of characters of the show with real life characters; willingness to call helpline; intention to use FP clinical service in near future; etc. Data collected through exit interviews was used to assess the percentage of the audience who felt the show was relevant to their concerns and the percentage of the audience who reported that they would act on the message of the show within next one week/month.

**Outcome measures:** Project Ujjwal introduced a standardized ‘client registration format’ for registering each of the sterilization, IUCD and injectable users from routine clinics, FDS at Ujjwal clinic and FDS at public facilities. Client registers introduced by the project were shared with the clinics. Clinic staff filled this register when any client availed clinical FP service from clinic/FDS. Outreach officer (project Ujjwal staff – one per district) compiled clinical FP services data according to clinic on a monthly basis.

Monthly compiled data provided outcome measures like: mean and median services per clinic; mean months of the clinic under Ujjwal network; and mean services per clinic per month – according to type of clinical FP service, during July 2013 to March 2015 period. The GOI’s Health Management Information System (HIMS) provided sterilisation and IUCD users data from the public sector clinics, during April 2013 to March 2015. Ujjwal helpline automatically converted details of each inbound and outbound call into an Excel file by date. Donor of the project (DFID) independently assigned a survey agency (*Sambodhi Research Pvt. Ltd.*) to independently monitor the quality and coverage of services provided by Ujjwal clinics and the EE shows facilitated by project Ujjwal.

**Statistical analysis:** For testing the hypothesis on the association between timing of shows on the uptake of FP services, the entire implementation phase of project (October 2013 to March 2015) was broadly categorized into four major periods:

1. **October 2013 to February 2014 (5 months):** During this period, the supply side activities: networking of private sector clinics; identification of sales outlets; and placement of products - were being set up by project. Planning for the shows was done. Hence, this period may be termed as ‘*prior to initiation of shows*’.
2. **March 2014 to July 2014 (5 months):** During this period first phase of live/video shows were held in Bihar and Odisha. Hence, this period may be termed as ‘*first phase of shows*’.
3. **August to November 2014 (4 months):** During this period there were no live/video shows. However, other demand generation activities like: the helpline; community meetings; counselling by Ujjwal Saathi; fixed day services at Ujjwal clinics/public facilities; etc. – continued without interruption. As a result of these continued activities and due to continued influence of first phase of shows we anticipate continuation of FP services uptake, despite absence of shows. Hence, this period may be termed as ‘*no shows, but other demand generation activities continued*’.
4. **December 2014 to March 2015 (4 months):** During this period second phase of live/video shows were held in the villages not covered during the first phase. Hence, this period may be termed as ‘*second phase of shows*’.

Mean (SD) and median (IQR) number of clinical services (sterilizations, IUCDs, injectable) provided per Ujjwal clinic, according to the four major periods listed above were the main outcome variables. Duration of the clinic with Ujjwal network was measured in terms of mean (SD) months. Mean (SD) sterilizations and IUCDs per month from the public health facilities of the state were the outcome variables of public health facilities. Mean number of inbound calls per day to Ujjwal helpline per month was used as an outcome measure for helpline. To estimate the significance of differences between two or more outcome measures we used ANOVA Tukey HSD Post-hoc test with 95% confidence interval, as this test provides significance of difference between all the groups as well as between specific groups. For testing influence of different periods of EE shows on the services uptake, we used one way ANOVA for four correlated samples. We analyzed data on an intention to treat basis in which we compared different EE shows periods, irrespective of the quality. For statistical analysis, we used computer software SPSS V.20.

## Results

Table 1 depicts the coverage of live/video shows, in the two program states. In Bihar, during the two phases, project Ujjwal has conducted 2,993 live shows and 1,600 video shows, from around 4,500 villages (out of 39,000 in state). Covered villages were spread across catchment areas of 222 Ujjwal Clinics in 38 districts. In Odisha: 1,103 live shows and 1,100 video shows were performed in around 2,200 villages (out of 47,000 in state) and the shows were held in the catchment area of 83 Ujjwal clinics in 30 districts. In both the states, the live shows were viewed by around one million people with a mean participation per show ranging from 223-331 individuals, while, the video shows were viewed by 0.35 million audience, with a mean participation ranging 77-150 per show. During the first phase of EE shows, although, referral coupons were distributed to potential FP method adopters and/or Ujjwal Saathis –there was no follow-up of the distributed coupons (Table 1).

Based on exit interviews from non-sterilized couples, we have tried to assess how shows were comprehended and what follow-up action was intended by them in next one month (Table 2). Irrespective of the state and type of show, almost all the respondents generally comprehended that the shows were on the topic of *'family planning'*, although some of them could specifically said that the shows were on *'spacing methods'* and on *'unintended pregnancy'*. Discussing with spouse about contraception was the topmost follow-up action proposed by eligible couple after attending the show, in both the states. Around 80% or more participants of second phase said that *'they would visit Ujjwal clinic in next one month'*, although fewer participants expressed this view after the first phase of EE shows.

Table 3 presents association between timing of demand generation activities and uptake of clinical FP methods during that period, from the routine Ujjwal clinics, in Bihar. By second phase of demand generation activities: 119 clinics provided sterilization services and as the demand generation activities of the project progressed, number of adopters of sterilization also increased significantly, and got peaked by second phase of live/video shows. Similarly, uptake of services for injectable contraception and IUCD insertions significantly improved. Mean injectable contraceptive services per clinic per month has doubled and IUCD uptake has tripled by the period of second phase of EE shows as compared to the period when there were no shows.

In Odisha, by second phase of DGS, 83 clinics were providing injectable contraception and IUCD services, out of whom 48 clinics provided sterilization services (Table 4). By second phase of live/video shows (Dec. 2014 – Mar. 2015) as compared to pre-shows period (Oct. 2013 – Mar. 2014): median (IQR) number of sterilisation adopters per Ujjwal clinic has increased to 98 (IQR: 54-131) when this figure was just 3.5 (IQR: 0-1.4) prior to shows. As compared to the period prior to the shows, by second phase of shows – mean sterilisation services per month per clinic has increased by around five times, injectable contraceptive services by nine times and IUCD by 44 times.

Figure 2 presents a comparative profile of annual number of sterilisations and IUCD+PPIUCD services from public health facilities during the period of shows (Apr. 2014 to Mar. 2015) and one year prior to initiation of shows by project Ujjwal (Apr. 2013 to Mar. 2014), in Bihar and Odisha. In both the states, number of acceptors of IUCD/PPIUCD services have increased substantially during the period of shows as compared to the year, prior to the shows by project, particularly in Odisha. Only in Odisha, adopters of sterilization from public health facilities have marginally declined during the period of shows as compared to earlier.

Figure 3 presents, month-wise fluctuations in number of in-bound calls to Ujjwal Helpline (*a toll-free number 1800 112121*) in Bihar and Odisha during Nov. 2013 (*when helpline started functioning*) to May 2015. There is a clear-cut association between in-bound calls to helpline and the timing of shows as, number of in-bound calls to helpline were substantially higher during the months of shows as compared to other months. Figure 4 presents conversion of the referral coupons supplied to potential eligible clients by Ujjwal Saathi's following the show into actual number of adopters of different FP, in Bihar and Odisha. Conversion of referral coupons into users seemed to be better for live EE shows as live shows covered all the methods of FP while video shows were designed to reinforce messages on FP methods use.

## Discussion

The purpose of the paper is to answer three research questions on the association of mid-media activities (specifically EE shows) of project Ujjwal on the behaviour changes of couples with unmet need for contraception, in Bihar and Odisha. With a coverage of Project Ujjwal's mid-media activities to one million viewers in Bihar and 0.35 million in Odisha: we have noticed a corresponding and significant increase in uptake of all the clinical FP services (sterilisation, injectable and IUCD) from the Ujjwal clinics, in both the states. We also noticed a similar increase in uptake of sterilization and IUCD/PPIUCD services from public sector clinics in Bihar and for IUCD/PPIUCD services in Odisha, during the period of shows, as these adopters might have opted public sector clinics. A substantial proportion of show attendees sought referral coupons and availed FP services, and there was a sudden escalation in the number of in-bound calls to the Ujjwal helpline during the timing of shows. Thus, our study demonstrated that: a regional culture-specific and a multi-pronged demand generation strategy with active involvement of service providers would generate interest among potential uses to seek FP services, in rural/remote areas.

The association between uptake of all the three services (sterilisation, injectable and IUCD) from Ujjwal clinics during the period of EE shows as compared to the period prior to the shows, is likely to be a genuine, as, we have used FP services data from all the Ujjwal clinics. In both the states we have Ujjwal clinics that performed very poorly as well as clinics that performed exceptionally well. Project Ujjwal has no influence on the FP services provided by the clinic, as clinic based project interventions are standardised. The FP services data used in this analysis was obtained from the service register maintained by the clinic. The service register is the basis for follow-up of IUCD and injectable cases through Ujjwal helpline. At least thrice during January 2014 to May 2015, randomly selected sample of FP service users of Ujjwal clinics were contacted by independent survey teams to conduct client satisfaction survey. More than 90% of the clients who obtained FP service from Ujjwal clinic were satisfied with the services and around 90% clients would recommend their friends to avail FP services from Ujjwal clinic (Palladium, 2016). Promotion of FP services through EE shows/Ujjwal Saathis and availability of service providers, in terms of Ujjwal clinics/public facilities might be the reasons for uptake of services during EE shows period.

During the period of the shows we have also noticed an increase in uptake of sterilisation and IUCD services from public facilities and in-bound calls to Ujjwal helpline – reinforces our hypothesis that DGS of project Ujjwal has positive influence on uptake of FP services in both Ujjwal and public clinics. An independent agency (*Sambodhi Research*) reviewed the quality and compliance of the live/video shows by contextualizing that: the project implementation plan included a lot of emphasis on demand generation activities by adopting a multi-layered communication approach to combat social, cultural and information barriers, and promote spousal communication. It concludes by stating that, *“the shows by using popular culture of song and drama format - saw a good message retention, recall and audience could identify themselves with the characters of the show may have made potential clients to visit Ujjwal clinic or public facility for the FP service”* (Amit, 2016).

**How comparable are our findings with others?** A controlled experimental trial in Matlab, Bangladesh, in which experimental group received quality family planning services (including home visits/IPC, access to an array of methods through clinic and follow-up care) - contraceptive use in the experimental group jumped from 5% to 33% in the first 18 months, and remained 25% higher than in the control area (Cleland et al 1994). A systematic review on the impact of demand-side interventions for the promotion of contraception outcome measures like: correct awareness about FP methods, spousal communication and use of FP methods – found that changes were moderate in the exposure group as compared to control group if exposure group received messages only through mass media; changes were good if the exposure group received messages through mass media plus social marketing; changes were always significant if the intervention group received messages from mass media plus interpersonal communication (Lisa et al, 2011). Project Ujjwal's demand generation strategy has both the components (mass media by shows and IPC by Ujjwal Saathi), and perhaps, by clubbing mass media with Ujjwal clinics project was able to increase uptake of FP services. The association between mid-media and contraceptive use - was also confirmed by a recent review, which concluded that, “well designed FP programs succeed in improving knowledge and attitudes toward FP

and in increasing use of contraceptives and reproductive health services” (MLE 2012). However, a randomised control trial of postnatal health education for mothers on infant feeding and FP practices in Nepal - had no impact on infant feeding or immunisation, although uptake of FP has significantly improved (Bolam et al 1998). Two recent studies in Ethiopia and Malawi showed that couple based FP education programs significantly improved contraceptive practices (Tilahun T et al 2015; Shattuck et al 2011).

**Strengths and limitations:** The content of live/video shows was developed based upon evidence generated through formative research and the shows were executed keeping in view the regional and culture specific sensitivities of the geographic region. A major strength of this study is its geographic spread: the demand generation strategies in general and EE shows in particular were spread across 68 districts of, rural Bihar and Odisha. Another strength of this research is that the teams performing the shows and the teams that have monitored the quality of the shows were independent. In addition, FP services data of this research was obtained from service registers of the clinic and health management information system (HMIS) of Government of India.

However, there are several limitations that should be acknowledged. First, it was not a randomised control study with intervention and control groups. This weakness in the design of the study forced us to limit the findings to longitudinal comparison, by artificially fixing analysis periods as: ‘*prior to shows*’ and ‘*during the shows*’. This weakness in design might have undermined the results of the study - as ‘pre-shows period (Oct. 2013 to Feb. 2014)’ is not really a ‘control’ or a ‘before’ the intervention period, because by that time majority of the clinics joined Ujjwal network, marketing outlets were established and some of the demand generation activities like helpline and radio campaigning has already started (figure 1). The second limitation is, we are not sure whether the uptake of services during the shows were due to the shows or due to other DGS of the project, and it is beyond the scope of the study to tease-out the real influence of shows on uptake of services. Location of the shows was mainly decided by the clinic, and majority of the villages selected by the clinics were small. This limitation of the size of villages covered by the show might have influenced audience participation, particularly for the video shows, and its impact. Despite stated limitations, this study, perhaps for the first time, in India provides, macro level (state) data on the influence of DGS of project in general and EE shows in particular on the contraceptive services uptake, at scale.

## Conclusions

Project Ujjwal adopted a synergized 360 degree demand generation strategy to inform, persuade and engage eligible couples for the family planning services, and linked them to products and services from public and Ujjwal clinics. The study demonstrated that, in Bihar and Odisha, with huge unmet need for contraception: a comprehensive demand generation strategy seemed to have created interest to clear the doubts about the service (by calling helpline and by speaking with spouse/friend/Ujjwal Saathi) - has ultimately seemed to have resulted into adoption of the service (uptake in services) from private (Ujjwal) clinics, particularly for long term spacing methods, IUCD and injectable contraceptives. Influence of demand generation strategies was also noticed in terms of increase in uptake of sterilization and IUCD services from public sector clinics. Substantial proportion of show attendees sought referral coupons to avail FP/RH service from Ujjwal clinic. Although more research is required, we may conclude that a regional culture-specific demand generation strategy with active involvement of service providers would generate interest among potential uses to seek FP services.

Inclusion of mid media/EE shows to the ongoing mass media and static/print media efforts will complete the loop of the ‘surround and engage strategy (Children’s Bureau, 2016). The ‘interactive’ mid media builds upon the message being communicated by the ‘passive media’ (print/electronic) and aids to a higher recall, thereby increasing the chances of a positive behaviour change. Hence, to improve the health indices and to achieve the desired behaviour change, it is suggested to have a comprehensive media mix (figure 1) comprising of mass (radio/television), mid (IPC, interactive live/video shows) and static (print/SD cards) media focusing on a particular thematic area and determinants. The combination of all three media mix will help in targeting the right

section/s of the society and achieving the desired behaviour within the stipulated timeframe (Sandra, 2013). Also GOI can re-cast various demand generation strategies of project Ujjwal for meeting the target of new users for FP 2020 (Vision FP2020, 2014).

**Conflict of Interest:** None

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Table 1: Characteristics of live/video entertainment and education shows conducted in Bihar and Odisha

Periodicity of the shows	Bihar			Odisha			
	Live 1st phase	Live 2nd phase	Video 2nd phase	Live 1st phase	Live 2nd phase	Video 1st phase	Video 2nd phase
	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015	Dec 2014 to Mar 2015	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015
<b>Number of shows</b>	<b>1542</b>	<b>1451</b>	<b>1600</b>	<b>560</b>	<b>543</b>	<b>528</b>	<b>572</b>
<b>Geographic Coverage</b>							
Districts	32	38	20	30	30	26	30
Villages	1515	1451	1600	560	543	525	562
Ujjwal clinics covered	193	197	106	80	83	70	83
Average shows per clinic	8.0	7.4	15.1	7.0	6.5	7.5	6.9
<b>Audience presence</b>							
Total audience	343,903	355,493	240,161	185,167	168,335	63,250	43,733
% Reproductive of age group couples	65.0	63.0	69.0	70.0	70.0	72.0	70.0
Average audience per show	223.0	245.0	150.0	331.0	310.0	120.0	76.5
<b>% Implementer's presence during the show (Multiple response)</b>							
Coordinator of demand generation activities	68.0	73.0	81.0	77.0	91.0	74.0	88.0
Out Reach Officer (Project Ujjwal)	19.0	15.0	18.0	64.0	61.0	24.0	34.0
Ujjwal saathi (Project Ujjwal)	61.0	39.0	9.0	78.0	76.0	61.0	64.0
<b>% Stakeholders presence during the show (Multiple response)</b>							
Clinic staff	28.0	28.0	9.0	29.0	12.0	12.0	6.0
Village leaders	10.0	12.0	10.0	35.0	61.0	9.0	16.0
Accredited Social Health Activist (ASHA)	29.0	32.0	35.0	60.0	37.0	42.0	60.0
Auxiliary Nurse Midwife (ANM)	4.0	3.0	3.0	5.0	3.0	4.0	4.0
Anganwadi worker (AWW)	21.0	34.0	20.0	32.0	35.0	34.0	38.0
Self Help Group (SHG) member	3.0	9.0	7.0	21.0	20.0	3.0	0.0
<b>Follow-up actions immediately after the show</b>							
Referral coupons of Ujjwal clinics distributed	2,997	2,984	--	4,769	--		
Leaflets about project activities distributed	11,675	108,825	--	42,355	--	--	
Helpline stickers pasted in the village	6,809	14,516	--	2,694	--	--	

-- : Data not collected

**Table 2: Comprehension of the entertainment and education shows and intended follow-up action after participating in show**

Periodicity of the shows	Bihar			Odisha			
	Live 1st phase	Live 2nd phase	Video 2nd phase	Live 1st phase	Live 2nd phase	Video 1st phase	Video 2nd phase
	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015	Dec 2014 to Mar 2015	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015	Mar 2014 to Jly 2014	Dec 2014 to Mar 2015
<b>Number of shows</b>	<b>1542</b>	<b>1451</b>	<b>1600</b>	<b>560</b>	<b>543</b>	<b>528</b>	<b>572</b>
<b>% Shows as comprehended by audience (multiple response)</b>							
Family Planning	22.0	38.0	29.0	64.0	33.0	32.0	44.0
Spacing between births	46.0	51.0	34.0	6.0	4.0	27.0	15.0
Unwanted pregnancies	15.0	15.0	23.0	25.0	47.0	38.0	33.0
Happy and healthy family	7.0	7.0	9.0	1.0	7.0	10.0	5.0
Reaching Ujjwal Clinic for family planning	5.0	5.0	4.0	6.0	3.0	1.0	1.0
<b>% Audience who intend to act within one month (multiple response)</b>							
Couple will discuss about contraception with spouse	81.0	87.0	92.0	63.0	97.0	95.0	91.0
Discuss with friends	56.0	49.0	87.0	43.0	89.0	70.0	79.0
Call Ujjwal helpline	61.0	71.0	88.0	8.0	96.0	83.0	88.0
Discuss with UjjwalSaathi	56.0	83.0	88.0	54.0	95.0	77.0	96.0
Will visit Ujjwal clinic	50.0	49.0	87.0	62.0	92.0	81.0	72.0

**Table 3: Association between family planning services at Ujjwal routine clinics and periodicity of demand generation activity, Bihar**

Period and type of method	Type of demand generation activity	Clinics who joined network	Total services provided by all clinics	Mean (SD) services per clinic	Median (IQR) services per clinic	Total months of all clinics in network	Mean (SD) months of clinic in network	Mean services per clinic per month (SD)
<b>Sterilizations*</b>				F <sup>#</sup> =35.3 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	96	3,013	31.4 (24.1)	22 (8 - 42)	345	3.6 (1.6)	8.7 (6.7)
Mar.2014 to Jly.2014	First round of live/video shows	102	4,530	44.4 (31.7)	32 (17 - 56)	508	5.0 (0.1)	8.9 (6.3)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	105	5,057	48.2 (40.9)	34 (1 - 63)	411	3.2 (0.5)	12.3 (10.5)
Dec.2014 to Mar.2015	Second round of live/video shows	119	11,696	98.3 (71.2)	90 (37 - 139)	463	3.9 (0.5)	25.3 (18.3)
<b>Injectable Contraceptives</b>				F <sup>#</sup> =29.7 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	165	2,414	14.7 (18.2)	6.5 (0 - 19)	551	3.6 (1.6)	4.4 (5.0)
Mar.2014 to Jly.2014	First round of live/video shows	187	9,134	48.8 (33.6)	38.5 (15 - 69)	929	5.0 (0.1)	9.8 (6.7)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	190	7,318	38.5 (30.9)	34 (7 - 59)	751	3.9 (0.5)	9.7 (7.9)
Dec.2014 to Mar.2015	Second round of live/video shows	203	6,537	32.2 (37.6)	21 (3 - 45)	799	3.9 (0.6)	8.2 (9.6)
<b>IUCD</b>				F <sup>#</sup> =30.0 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	165	1,939	11.8 (9.6)	8 (2 - 15)	551	3.6 (1.6)	3.5 (2.7)
Mar.2014 to Jly.2014	First round of live/video shows	187	5,892	31.5 (28.4)	22 (14 - 35)	929	5.0 (0.1)	6.3 (5.7)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	190	5,202	27.4 (23.8)	20 (7 - 38)	751	3.9 (0.5)	6.9 (6.0)
Dec.2014 to Mar.2015	Second round of live/video shows	204	8,483	41.6 (0.8)	30 (12 - 57)	803	3.9 (0.6)	10.6 (10.5)
<b>All three services**</b>				F <sup>#</sup> =35.8 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	165	8,878	53.8 (43.6)	36 (15 - 69)	551	3.6 (1.6)	16.1 (12.1)
Mar.2014 to Jly.2014	First round of live/video shows	187	22,651	121.1 (74.4)	102 (60 - 147)	929	5.0 (0.1)	24.4 (14.9)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	190	21,694	114.2 (68.0)	106 (50 - 151)	751	3.9 (0.5)	28.9 (17.0)
Dec.2014 to Mar.2015	Second round of live/video shows	204	29,398	144.8 (83.2)	140 (84 - 208)	803	3.9 (0.6)	36.6 (21.3)

\*: Sterilization services are provided only at all services clinics with gynecologist/surgeon in service or on call

\*\* : All three services data will not match with sterilization + injectable contraceptives + IUCDs, as few IUD/Injectable clinics also provided sterilization services

S.D: Standard Deviation; IQR: Inter Quartile Range

#: One way ANOVA for correlated samples (<http://vassarstats.net/anova1u.html>)

**Table 4: Association between family planning services at Ujjwal routine clinics and periodicity of demand generation activity, Odisha**

Period and type of method	Type of demand generation activity	Clinics who joined network	Total services provided by all clinics	Mean (SD) services per clinic	Median (IQR) services per clinic	Total months of all clinics in network	Mean (SD) months of clinic in network	Mean services per clinic per month (SD)
<b>Sterilizations*</b>				F <sup>#</sup> =24.1 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	40	955	23.9 (62.6)	3.5 (0 - 1.4)	230	5.7 (1.7)	4.1 (11.0)
Mar.2014 to Jly.2014	First round of live/video shows	44	996	22.6 (63.7)	5.0 (0 - 23)	168	3.8 (0.6)	5.9 (16.8)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	45	549	12.2 (12.9)	7.5 (1 - 19)	135	3.0 (0.0)	4.1 (4.3)
Dec.2014 to Mar.2015	Second round of live/video shows	48	4,905	102.2 (64.0)	98 (54 - 139)	240	5.0 (0.0)	20.4 (12.8)
<b>Injectable Contraceptives</b>				F <sup>#</sup> =31.7 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	72	373	5.1 (8.9)	1 (0 - 5)	391	5.4 (1.8)	1.0 (1.6)
Mar.2014 to Jly.2014	First round of live/video shows	79	1,049	13.3 (14.0)	8 (3 - 16)	301	3.8 (0.6)	3.5 (3.7)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	80	1,400	17.5 (19.8)	13 (6 - 20)	240	3.0 (0.0)	5.8 (6.6)
Dec.2014 to Mar.2015	Second round of live/video shows	83	3,672	44.2 (48.2)	35 (15 - 59)	415	5.0 (0.0)	8.8 (9.6)
<b>IUCD</b>				F <sup>#</sup> =64.3 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	72	125	1.7 (4.3)	0 (0 - 0)	391	5.4 (1.8)	0.3 (0.8)
Mar.2014 to Jly.2014	First round of live/video shows	79	470	5.9 (9.3)	2 (0 - 8)	301	3.8 (0.6)	1.6 (2.4)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	80	720	9.0 (9.8)	6 (0 - 13)	240	3.0 (0.0)	3.0 (3.3)
Dec.2014 to Mar.2015	Second round of live/video shows	83	5,425	65.4 (61.7)	52 (8 - 108)	415	5.0 (0.0)	13.1 (12.3)
<b>All three services**</b>				F <sup>#</sup> =66.4 (p<0.0001)				
Oct.2013 to Feb.2014	Prior to initiation of live/video shows	72	1,525	21.2 (48.3)	5 (0 - 17)	391	5.4 (1.8)	3.9 (8.9)
Mar.2014 to Jly.2014	First round of live/video shows	79	2,603	32.9 (51.7)	16 (7 - 39)	301	3.8 (0.6)	8.6 (13.6)
Aug.2014 to Nov.2014	No shows, but other demand generation activities continued	80	2,730	34.1 (28.6)	30 (13 - 45)	240	3.0 (0.0)	11.4 (9.5)
Dec.2014 to Mar.2015	Second round of live/video shows	83	14,455	174.2 (129.3)	172 (62 - 273)	415	5.0 (0.0)	34.8 (25.9)

\*: Sterilization services are provided only at all services clinics with gynecologist/surgeon in service or on call

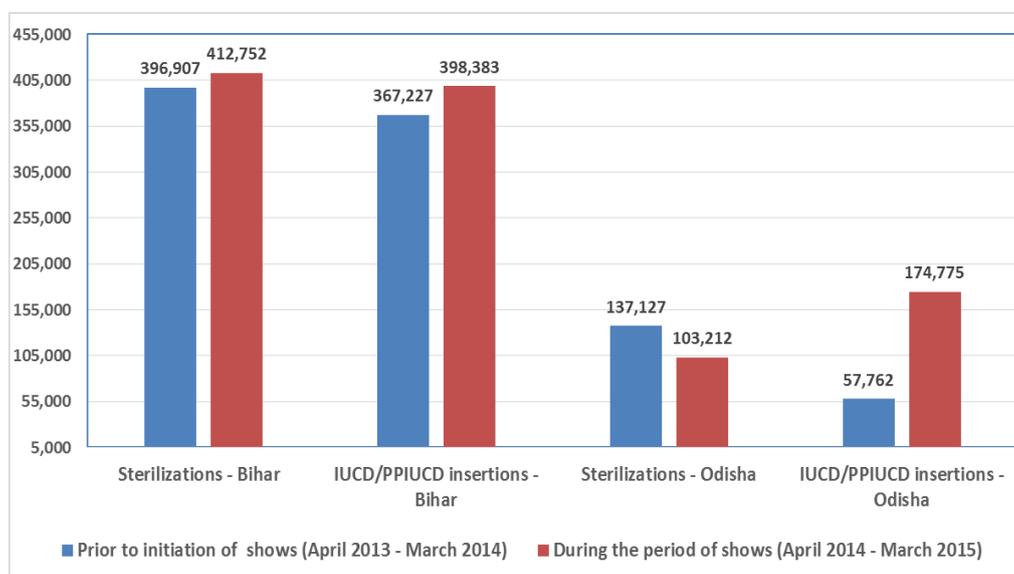
\*\* : All three services data will not match with sterilization + injectable contraceptives + IUCDs, as few IUD/Injectable clinics also provided sterilization services

S.D: Standard Deviation; IQR: Inter Quartile Range

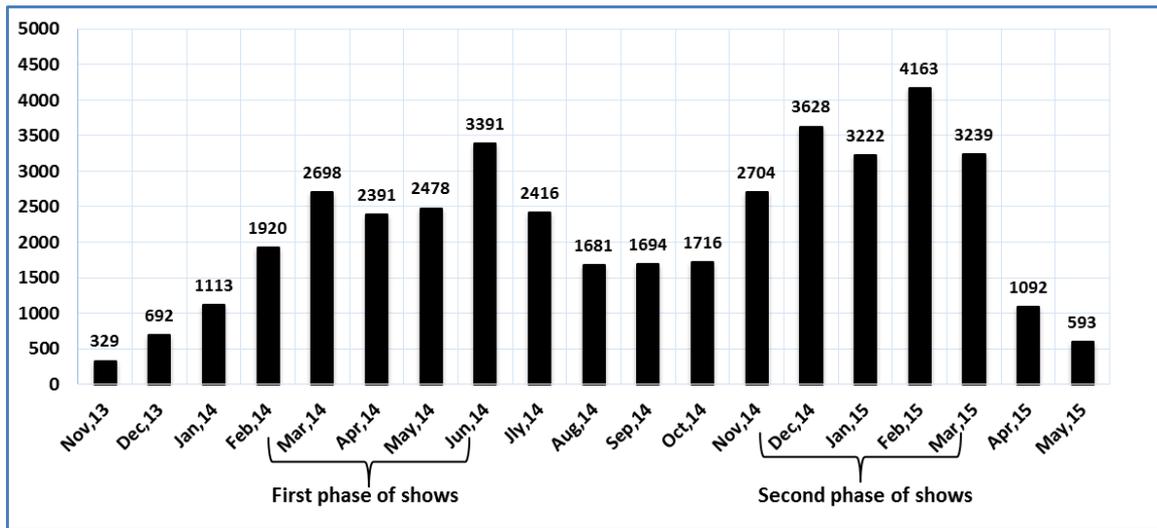
#: One way ANOVA for correlated samples (<http://vassarstats.net/anova1u.html>)

**Figure 1: Different demand generation strategies adopted by project Ujjwal by timing**

Type of demand generation	2013			2014												2015				
	Jan-Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
	<b>Bihar</b>																			
Creation of Ujjwal clinics, Ujjwal Saathis, outlets, capacity building, other mass media etc.	■	■																		
Helpline to do follow-up of FP adopters and clarify doubts			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Radio campaigns					■	■														
Television program in Doordarshan, Patna										■								■		
Entertainment & Education - Live shows							■	■	■	■					■	■	■	■		
Entertainment & Education - Video shows																				
Scan Disk (SD) cards to community health workers										■	■	■	■	■	■	■	■	■	■	■
Market Town Activities											■	■	■	■	■	■	■	■		
Gyan Jyothi - mHealth pilot project													■	■	■	■	■	■	■	■
Private television and radio, print media campaigns																		■	■	
	<b>Odisha</b>																			
Creation of Ujjwal clinics, Ujjwal Saathis, outlets, capacity building, other mass media	■	■																		
Helpline to do follow-up of FP adopters and clarify doubts			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Radio campaigns							■	■												
Television program in Doordarshan, Bhubaneswar																		■	■	
Entertainment & Education - Live shows										■	■				■	■	■	■		
Entertainment & Education - Video shows																				
Scan Disk (SD) cards to community health workers										■	■	■	■	■	■	■	■	■	■	■
Market Town Activities											■	■	■	■	■	■	■	■		
Private television and radio, print media campaigns																		■	■	

**Figure 2: Annual sterilization and IUCD+PPIUCD adopters from public facilities prior to and during shows, Bihar and Odisha**

**Figure 3: Monthly variations in number of in-bound calls to Ujjwal project helpline**



**Figure 4: Adaptors of family planning among the participants of live/video show - who got referral coupon from Ujjwal Saathi**

