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## Studying the Utilization of Emergency Contraceptive Services through Paramedics in India

### **Introduction**

Despite the wide availability of a range of modern contraceptives, unwanted and unplanned pregnancies continue to be a major problem in most of the developing countries. In India, 21 percent pregnancies are unplanned (IIPS and ORC Macro 2000), and 6.5 million induced abortions are carried out every year (Chhabra and Nuna 1994).

Situations such as unprotected sex, improper use of regular contraceptives, failure of barrier methods and sexual violence often lead to an unwanted pregnancy. In such situations emergency contraceptive pills gives woman a last chance to prevent unwanted pregnancy from unprotected intercourse. This would protect a large number of women



The Honorable Health Minister Dr. Digamber Singh, Government of Rajasthan Inaugurating the Training of Master Trainers

from the trauma of induced abortions, as well as reduce morbidities and mortalities from abortions and pregnancy complications. Millions of women globally have used emergency contraceptive methods safely and effectively. Emergency Contraceptive Pills (ECP) contain increased doses of hormone used in regular contraceptive pills and should be taken within 72 hours of unprotected intercourse.

A study in China estimated that introduction of emergency contraceptive pills could halve the number of induced abortions (UNDP/UNFPA/WHO 2001). A recent study in Bangladesh also indicated that introduction of ECP in the National Family Planning Program reduced resorting to abortions to end unwanted pregnancies by one third. However, because of small sample size, further study is required to validate this finding. The study also showed that 90 percent of women used ECP only once during the nine-month study period, refuting the concern about its repeat use. Moreover, after using ECP, contraceptive users returned to the regular method and new users joined the fold (Khan et. al. 2004).

Government of India introduced ECP in the National Family Planning Program in 2003. Many feasibility studies were conducted by the Indian Council of Medical Research (ICMR) thereafter. It is currently available in two oral dose regime of 0.75 mg Levonorgestrel each, first dose to be taken within 72 hours of unprotected sexual intercourse and the second dose to be taken 12 hours after the first dose. Currently, ECP is provided only through registered medical practitioners on prescription.

In India, many firms are manufacturing ECP and marketing at different prices ranging from Rs. 34 to Rs. 45 for the pack of 2 pills (Table 1). Even after two years of introduction of ECP in the national program, awareness about ECP among community members

**Table 1: Brand Names and Cost of ECP Available in India**

| Name of Pill  | Manufactured by        | Cost   |
|---|------------------------|--------|
| Ecee 2  | German Remedies        | Rs. 35 |
| Norlevo   | HRA Pharma (France)    | Rs.45  |
| Pill 72   | Cipla Ltd.             | Rs.34  |
| E.P. 72   | Bennet Pharmaceuticals | Rs.40  |
| E-pills   | Hindustan Latex Ltd.   | --*    |
| * Distributed free at Government dispensaries and clinics |                        |        |

as well as providers is very low. Only few know about ECP as a method to prevent unwanted pregnancy after unprotected intercourse and even among those who are aware of ECP, very few know how to use it correctly. To make ECP easily accessible and effective in preventing unwanted pregnancies, it is critical that potential users be made aware of correct use of ECP and the sources from where it could be obtained. As long as ECP remains a prescription drug and available at the PHC/CHC level, its accessibility to potential users will remain limited – both because of physical distance between village and PHC/CHC and social barrier because of the sex of the providers as most of the doctors at PHCs/CHCs are male. Women, particularly young women may not like to disclose about their unprotected intercourse and get supply of ECP from male doctors.

In the absence of any educational campaign and orientation training, most of the providers and potential users (women aged 15 - 45 years) are neither aware of ECP nor about its availability. Thus, so far it has not reached the intended clients and its use two years after its introduction in the national program has remained negligible. In rural settings, provision of ECP by female paramedics at the sub centre level coupled with awareness raising campaign will increase its accessibility and utilization manifold. However, this is not possible as long as ECP remains a scheduled drug, available only on prescription.

Recognizing the importance of approving ECP as "Over the Counter" (OTC) drug, there by allowing paramedics (ANMs /LHVs) to dispense it to clients, Indian Council of Medical Research (ICMR) in collaboration with FRONTIERS program of the Population Council is carrying out a research to assess usefulness and effectiveness of using paramedics in educating and providing ECP services to the potential users. Paramedics include Auxillary Nurse Mid-wife (ANM)s, Lady Health Visitors (LHVs) and Male Health Workers (MHWs). The specific objectives of the study are:

1. To compare the quality and safety of ECP services provided by the doctors and paramedical staff
2. To study the increase in utilization of ECP services when delivered through paramedical staff
3. To study the training requirement of paramedical staff for providing ECP services correctly

Thus, one of the key hypotheses of the study is to test whether paramedics can be trained to provide ECP and whether they could deliver the services as efficiently and correctly as trained medical officers. This Update discusses the findings from qualitative information collected from women and paramedics on current practices to avoid pregnancy after unprotected intercourse and the pre and post training evaluation of the doctors and paramedics from the three study sites.

### Study Design

The study uses post-test only study design that compares two different delivery models. In one intervention area only medical doctors were trained and provided ECP services. In the second intervention area both doctors and paramedics (ANM/LHV) were trained in ECP and provided ECP services. Rest of the PHCs of the district remained as control area. The first model represents the existing

practice, while the second model is hoped to be introduced, if the study results are positive and the hypothesis that paramedics could be trained to provide ECP services as efficiently as doctors is proved (Table 2).

**Table 2: Alternative Service Delivery Models**

| Intervention Models | Training and Provision of ECP services by: |            |
|---------------------|--|------------|
|                     | Doctors                                    | Paramedics |
| Model 1             | ✓  | -          |
| Model 2             | ✓  | ✓          |
| Control             | -  | -          |

The intervention and follow-up of the women acceptors will be for a duration of 9 months. Impact evaluation will be based on (1) the follow-up survey of ECP acceptors and their answers to questions related to safety and quality of services; and (2) service statistics on number of cases served by doctors and ANMs in the two intervention and control areas.



Study is being carried out in one district each from three major states of India: Uttar Pradesh (Meerut), Rajasthan (Jaipur), and Maharashtra (Thane). From each of the selected district, six CHC areas were

selected at random. These CHC areas were then randomly allocated to the two delivery models and one control group (Table 2). In terms of population, in each state about 180,000 population is being covered. The Human Reproduction Research Centers (HRRCs) of ICMR attached to different medical colleges are implementing the project, with technical assistance from FRONTIERS program of the Population Council.

### **Observations from Qualitative Data**

Before implementing the intervention (training of staff and provision of ECP services) in each state, 6 Focus Group Discussions (FGDs) of women in the reproductive age group and 2 FGDs of ANMs/LHVs were conducted. This provided an overview of the expected acceptability of ECP, and information on what methods women used soon after unprotected intercourse to prevent unwanted pregnancy. Studies in Bangladesh and Nepal show that many women use methods, which have serious repercussion on women's health (Khan et. al., 2004; CREHPA 2004). The FGD's in the three districts revealed that in villages unprotected sex is common and frequent, often because their husbands do not co-operate. As a woman said,

*“In our village unprotected sex (UPS ) is common and takes place very frequently”*

Another women commented,

*“Many men are drunkards. They beat up the women, won't work for money and then make her pregnant. The women have to work in the fields to make money for the household expenses and on top of that handle this unwanted pregnancy. This is the poor state of women.”*

According to the informants, women use various methods to prevent pregnancy after unprotected intercourse. According to them women resort to

methods like wiping external genitals with cloth, urinating immediately after intercourse, eating hot foods like papaya, eggs or chicken, drinking turmeric, boiled carrot seeds, boiled castor seeds or various herbal concoctions.

As women said,

*“Yes, one method is that egg shells are roasted on “tawa”, then it is ground and sieved and is taken with water, then women won't conceive.”*

*“If women don't want a pregnancy they eat something hot (certain foods are classified as hot foods eg Pappaya, Chicken, Eggs, etc.)”*

*“Women drink juice of boiled carrot seeds. Turmeric powder is eaten. Boiled turmeric and jaggery is eaten.- Castor seeds are boiled and taken. If these seeds are taken with water on 3rd / 5th day then we are protected. I haven't taken, only heard of it.”*

*“Some older women tell that, immediately after intercourse the women should lie face down then the pregnancy will not occur.”*

Women welcomed the introduction of ECP and enquired about its availability at PHCs. Majority of the women however wanted the supply at sub-center and felt that it should be available through ANMs. Comments from FGDs of women reflect their views,

*“We will be shy to ask for this tablet from doctor.”*

*“Women will prefer taking it from nurses (Sub-center).”*

*“Women will be more willing to go to ANM to ask for ECP.”*

Some other informants added,

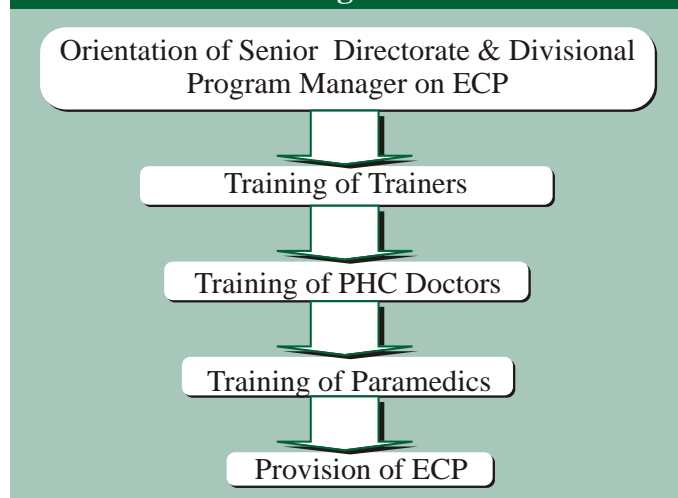
“Since women are badly in need of ECP, they can do anything. If pill is not available at sub-center, they will save money for traveling to PHC.”

“Even if it means asking doctor for ECP, she will-She will be saved from a lot of problems (from an unwanted pregnancy).”

### Implementing Training Program

Training and education campaign plays critical role in introducing any innovation. Successful implementation of ECP program will depend a lot on proper orientation of the providers on provision of ECP services and educating potential users how to use the method correctly. To ensure that ECP is not misused, women need to be told that ECP is neither a regular family planning method nor an abortifacient. Women also need to be educated on how to use ECP correctly and after using ECP how to go back to their regular method of contraception.

#### Box 1: Steps Followed for Implementing ECP Program



Keeping these aspects in mind, a three-tier-training program was planned and implemented in all the three districts (Box-1). To build the capacity of the PHC delivery system in ECP, we wanted the doctors in the system to train their colleagues. Everywhere, the research partners trained the doctors and doctors from the corresponding PHC trained the ANMs / LHVs / MHWs about ECP. The same set of



Using a Large Flip Chart in the Training of Paramedics

transparencies was used for all the training sessions to keep the training uniform. Indeed, research staff from HRRCs, ICMR and FRONTIERS were present as observers in all the trainings and provided technical assistance when required.

### Preparatory Work

The structure and content of the ECP training in the present study is based on the experience of operations research conducted by the FRONTIERS Program in Bangladesh to introduce and scale up the provision of ECP through paramedics and community health workers in the entire country. The curriculum of the training was already developed and tested in Bangladesh. The transparencies used in Bangladesh for the training were adapted for India, as well as translated into Hindi and Marathi for training of paramedics. In addition, a small flipbook was designed which paramedics could carry in their bags to the villages and use for educating women and men about ECP. The ECP brochure and manual y



Flip Chart and Flyers

developed for Bangladesh was critically reviewed and adapted with certain modifications, before utilizing them in India. Posters on ECP was developed and printed by the respective HRRCs with culturally acceptable pictures.

### Sensitization Workshop

An orientation program was held in Jaipur in September 2004, before the training activities began at the study sites. In addition to the study partners (3 HRRC's staff), government representatives – e.g. District Medical Officer, RCH officer – from the 3 states also attended the workshop. Dr. Digamber Singh, the Health Minister of Rajasthan, inaugurated the meeting. Till the date of the meeting, the state officials were not aware that ECP has been introduced in the FP program and they need to collect the supply from MOH& FW warehouse for distribution at PHC. Immediately after inauguration, Dr. Singh advised the Family Welfare Director to take urgent action to procure the supply of ECP from the MOH& FW store and organize orientation of the workers.

All together 20 officials and researchers participated in the sensitization workshop. All the participants were oriented about ECP, its use, indications and contraindications, side effects and its management and details on counseling clients. To ensure proper planning and implementation of the project, they also spent time in three groups to discuss preparatory work required to implement the project. Three groups were formed and each group was assigned one of the three topics- (1) training of district and PHC staff, (2) IEC support including development of leaflets, posters, flipchart and quantity of each educational material required by the three participating centers and (3) time schedule for the actual implementation of the project. To ensure that all the three participating institutions contributed in this planning, at least one representative from each of the 3 HRRCs was member in each working group.

The brain storming session and group discussions helped to finalize the details of the implementation and brought forth clear ideas about how to go forward.

### Training of Doctors and Paramedics

In the second stage, on the basis of the planning made at Jaipur, in each of the three study states, district

**Table 3: Number of Doctors and Paramedics Trained in ECP**

| State         | Doctors | Paramedics |
|---------------|---------|------------|
| Uttar Pradesh | 39      | 54         |
| Rajasthan     | 40      | 125        |
| Maharashtra   | 44      | 102        |
| TOTAL         | 123     | 271        |

level training was organized by HRRC with technical assistance from the FRONTIERS program and ICMR. In consultation with the district authorities and medical officer in charge of the CHCs, the details of implementation like the dates of training for the PHC doctors, how to divide the doctors in batches, and the venue of the training for the doctors and paramedics were finalized. In two study sites, doctors' trainings were held in the medical colleges, while in one place it was organized at the District Medical Officer's (DMO's) office. The training of the paramedics was held at the respective CHC or a suitable hall like the *gram panchayati samati*

### Box 2: Contents of the Training

- What is Emergency Contraception?
- What is Emergency Contraceptive Pills (ECP)?
- Who should be provided with ECP?
- Dose, interval between doses, the time limit, ECP effectiveness and mode of action
- Side-effects and their management
- How to counsel potential ECP users?
- How to return to regular family planning methods after ECP use
- What could be done in case of ECP failure?

(Village Panchayat Committee) hall to which the paramedics from the selected PHCs could easily commute.

Half day training was held for the doctors and one day training for the paramedics. As per design of the study, in one intervention area, only doctors received the training while in the second intervention area all doctors and paramedics received ECP training. The three study sites taken together, a total of 123 doctors and 271 paramedics received the training (Table 3). In all the sites, some doctors from the medical colleges also attended the training. In Uttar Pradesh, in addition to this, most of the district health officials also participated in the training. Before the intervention started, seven doctors of Rajasthan and five doctors of Maharashtra were transferred. HRRC staff trained the new doctors who were posted in that place.

The training covered both technical and non-technical part such as composition of ECP, when to take it, at what time interval, and what points should be emphasized while counseling clients (Box-2).

### Monitoring and Evaluation

To evaluate the impact of the training sessions, pre- and post-training tests were conducted. Before starting training, the doctors and paramedics were given a brief multiple-choice questionnaire. Few questions had more than one right answer among the multiple choices, thus capturing complete and in-depth knowledge about ECP administration. Questions covered all aspects of ECP use such as when to use, composition, dosage, effectiveness, side effects and its management. The same test was repeated immediately after the training. Comparison of the answers of pre- and post-training tests helped in assessing impact of training of the providers in imparting correct knowledge of ECP and its use.



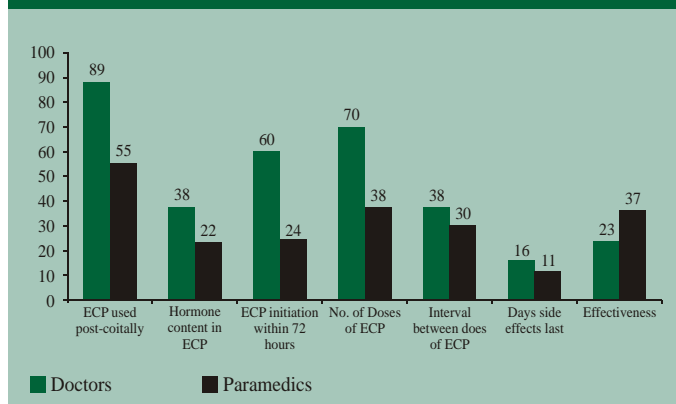
Paramedics Answering Post-training Test

The training was satisfactorily completed in all the study sites. The training sessions were well planned, the trainers came prepared to take the various sessions as well as encouraged the participants to ask questions and clarify their doubts, if any. The venue of the training was adequate for the training. In Maharashtra as the training sites did not have back-up generators and current failure imminent, wall charts were prepared and used during the training.

### Findings from Pre & Post Training Tests

The results of pre and post- training tests of doctors and paramedics are presented in Tables 4 and 5. The data indicates that before training, knowledge of both doctors and paramedics about ECP was quite low (Figure 1). For instance, all doctors taken together, only two-thirds were aware of the correct time within which ECP must be initiated after

Figure 1: Knowledge of Doctors and Paramedics About ECP- Findings from Pre-training Test



unprotected intercourse. Similarly, 70 percent and 38 percent doctors respectively mentioned the number of doses, and interval between two doses correctly. In case of paramedics, the corresponding percentages were still lower at 38 percent and 30 percent respectively (Figure 1).

Training of the service providers for provision of ECP, spreading knowledge about the methods among the potential clients and making it accessible to users are key components of introducing any new method or service. In the absence of any systematic effort to address these issues, the poor knowledge of providers about ECP reported above, is not surprising. Our discussion with doctors at district level revealed that even though MOH&FP had approved ECP in 2003, no serious effort was made to

train providers or to launch IEC campaign to inform potential users. As a result, many of the states had not lifted ECP supply from the Central Warehouses, and the states that had received the supply did not distribute it to the districts. Besides, in the absence of IEC campaign there was hardly any demand for the method.

A comparison of doctor's knowledge across the three states shows that doctors from Uttar Pradesh had slightly better knowledge before training than doctors from the other two states. However, in case of paramedics, the providers from Maharashtra had relatively better knowledge before training than providers of Rajasthan and Uttar Pradesh.

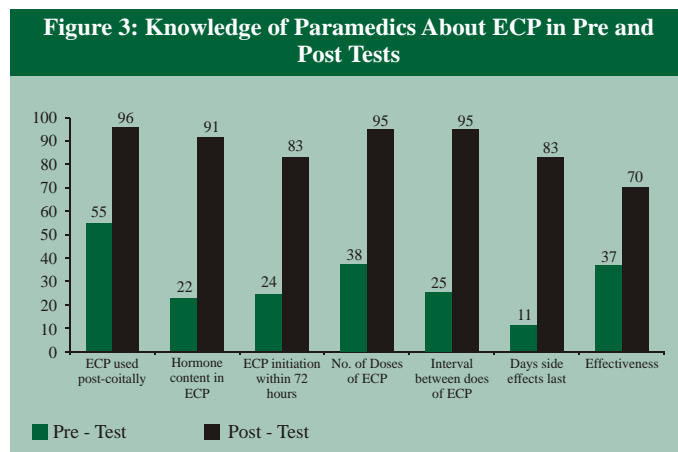
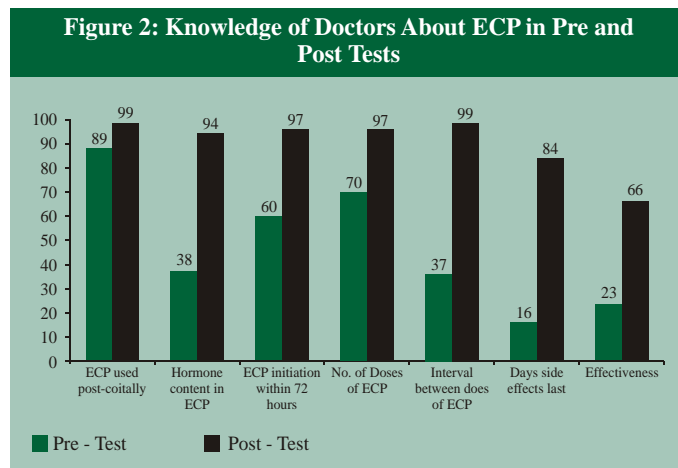
**Table 4: Doctors Knowledge Before and After Training on ECP (Percent)**

| Questions                               | Uttar Pradesh<br>(n=39) |       | Rajasthan<br>(n=40) |       | Maharashtra<br>(n=44) |       | All<br>(n=123) |       |
|---|-------------------------|-------|---------------------|-------|-----------------------|-------|----------------|-------|
|   | Before                  | After | Before              | After | Before                | After | Before         | After |
| ECP is used post coitus                 | 81                      | 100   | 95                  | 100   | 90                    | 98    | 89             | 99    |
| Hormone content in ECP                  | 52                      | 100   | 29                  | 100   | 37                    | 82    | 38             | 94    |
| ECP should be initiated within 72 hours | 61                      | 95    | 66                  | 95    | 54                    | 100   | 60             | 97    |
| Number of pills/doses in ECP            | 90                      | 92    | 58                  | 100   | 66                    | 100   | 70             | 97    |
| Interval between doses of ECP           | 45                      | 97    | 32                  | 100   | 39                    | 100   | 38             | 99    |
| Number of days side effects last        | 16                      | 80    | 8                   | 100   | 22                    | 73    | 16             | 84    |
| Percent effectiveness of ECP            | 32                      | 69    | 18                  | 78    | 20                    | 53    | 23             | 67    |

**Table 5: Paramedics Knowledge Before and After Training on ECP (Percent)**

| Questions                               | Uttar Pradesh<br>(n=54) |       | Rajasthan<br>(n=125) |       | Maharashtra<br>(n=102) |       | All<br>(n=271) |       |
|---|-------------------------|-------|----------------------|-------|------------------------|-------|----------------|-------|
|   | Before                  | After | Before               | After | Before                 | After | Before         | After |
| ECP is used post coitus                 | 48                      | 94    | 50                   | 100   | 65                     | 93    | 55             | 96    |
| Hormone content in ECP                  | 7                       | 93    | 24                   | 98    | 27                     | 83    | 22             | 91    |
| ECP should be initiated within 72 hours | 11                      | 82    | 24                   | 91    | 31                     | 76    | 24             | 83    |
| Number of pills/doses in ECP            | 30                      | 87    | 25                   | 99    | 47                     | 95    | 38             | 95    |
| Interval between doses of ECP           | 17                      | 95    | 28                   | 95    | 30                     | 95    | 30             | 95    |
| Number of days side effects last        | 0                       | 70    | 14                   | 88    | 14                     | 83    | 11             | 83    |
| Percent effectiveness of ECP            | 35                      | 91    | 46                   | 91    | 25                     | 43    | 37             | 69    |

The results clearly show significant increase in the knowledge of all providers (doctors and paramedics) after training (Figures 2 and 3).



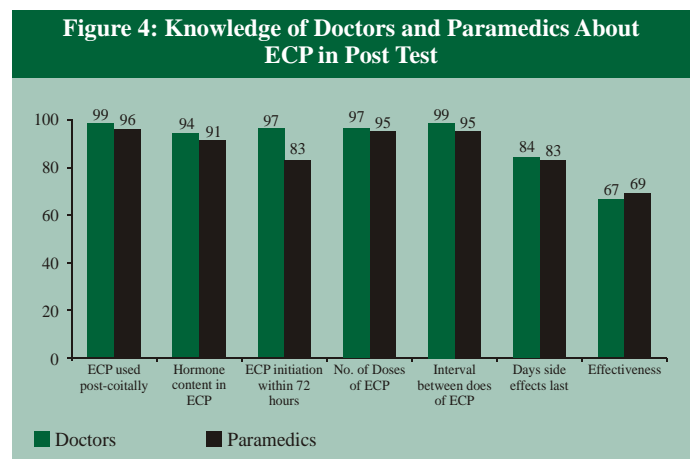
A comparison of the knowledge of doctors and paramedics about ECP after training (Figure 4) shows:

- Significant increase in the level of ECP knowledge in both the groups
- The improvement of ECP knowledge was very high among paramedics

- After training, the knowledge gap between doctors and paramedics became insignificant

This shows that paramedics could easily be trained to provide ECP services and after training, both doctors and paramedics will have same level of knowledge about ECP and its correct use (Figure 4). This observation is further confirmed by Table 6, which gives the percentage of doctors and paramedics who were aware of the four key aspects necessary for the correct use of ECP- when to use, time of initiation after unprotected intercourse, number of required doses, and interval between two doses.

Only about a quarter of doctors had correct knowledge on all the four components of correct ECP use before the training. After training, proportion of doctors with correct knowledge increased to more



than 90 percent (92-98%). In case of paramedics of Meerut and Jaipur the corresponding percentages were extremely low before training (2-3 %), which increased to 80-86 percent after the training. This is

**Table 6: Percentage of Doctors and Paramedics who Answered Correctly All Four Aspects of ECP's Correct Use**

|        | Uttar Pradesh  |                   | Rajasthan      |                    | Maharashtra    |                    | All             |                    |
|--------|----------------|-------------------|----------------|--------------------|----------------|--------------------|-----------------|--------------------|
|        | Doctors (n=39) | Paramedics (n=54) | Doctors (n=40) | Paramedics (n=125) | Doctors (n=44) | Paramedics (n=102) | Doctors (n=123) | Paramedics (n=271) |
| Before | 32             | 2                 | 13             | 3                  | 25             | 18                 | 23              | 7                  |
| After  | 92             | 80                | 93             | 86                 | 98             | 67**               | 94              | 74                 |

\*\*p=0.001

NOT significantly different from the doctors in these states. In the case of Maharashtra, despite the improvement in knowledge after training, significant difference was noticed between the number of doctors and paramedics who could correctly answer all the four questions correctly. The relatively less gain in knowledge of paramedics of Maharashtra has been communicated to the HRRC and special attention will be given to improve the knowledge of the paramedics during monitoring visits.

### Lessons Learned

- Qualitative data reveals prevalence of frequent unprotected intercourse in rural areas and high demand for ECP
- Women desire the availability of ECP at the sub-center level, provided by ANMs
- Both doctors and paramedics have very low level of ECP knowledge and require training to educate clients about correct use of ECP
- Half day training model to train doctors and one day training for paramedics developed by the study is sufficient to provide ECP correctly
- The paramedics could easily be trained in the provision of ECP. After training, both doctors and paramedics could achieve the same level of expertise in provision of ECP
- The training aids and educational package developed for ECP training was useful and effective

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