

## Expanding Informed Contraceptive Choice for Indian Women: Will Nexplanon Matter?

**Health Technology Assessment in India (HTAI), Department of Health Research,  
Ministry of Health and Family Welfare, New Delhi, India**

**ICMR-National Institute for Research in Reproductive and Child Health, Mumbai, India**

### BACKGROUND

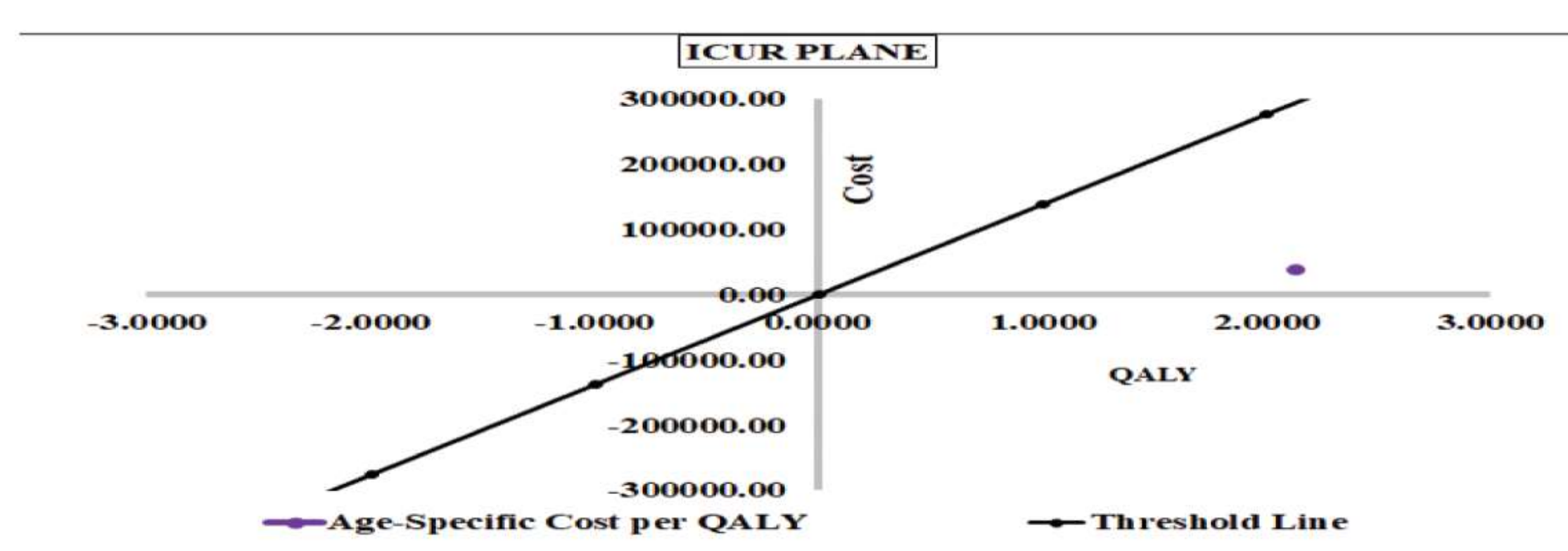
- Currently, India's National family planning program has two Long Acting Reversible Contraceptive (LARC) methods: Copper-Intra Uterine Device-380-A and Depot Medroxy Progesterone Acetate (DMPA) three-monthly injections.
- ICMR has conducted a phase-3 clinical trial on Implanon during 2004-2008 enrolling 3119 women across India.
- Implanon was offered along with other existing contraceptive methods available in the National family welfare program.
- Relative acceptability of Implanon was observed to be 2.1% among all contraceptive methods, and 3.4% among spacing methods.

### PURPOSE

- HTA was performed to assess cost-effectiveness of another LARC (Nexplanon, a sub-dermal contraceptive implant), and whether it should be added to the National Family Planning Program.

### RESULTS

- Economic evaluation using age specific data on contraceptive use demonstrates that an additional cost of INR 17,716 would be required to gain one QALY, which is well within the threshold of GDP per capita (about 137945 INR).
- Simulated cohorts of 15-year olds (from census 2011) with the mentioned health states through the Markov model showed about 10.48 lakh pregnancies, 1.17 lakh maternal deaths and 10.22 lakh child births could be averted by adding Nexplanon to public health system. Sensitivity analysis showed that increase in contraceptive users will improve cost-effectiveness.
- Budget Impact Analysis (BIA) to the additional expenditure for Nexplanon over a period of three years at different levels of public health care facilities was assessed, and showed that expenditure towards Nexplanon will amount to less than 0.5% of the health budget of the country. This included its price and estimated number of acceptors, information education and communication activities, training of health personnel, incentives on acceptance



**Incremental Cost-Utility Ratio (Additional cost to gain one QALY)**

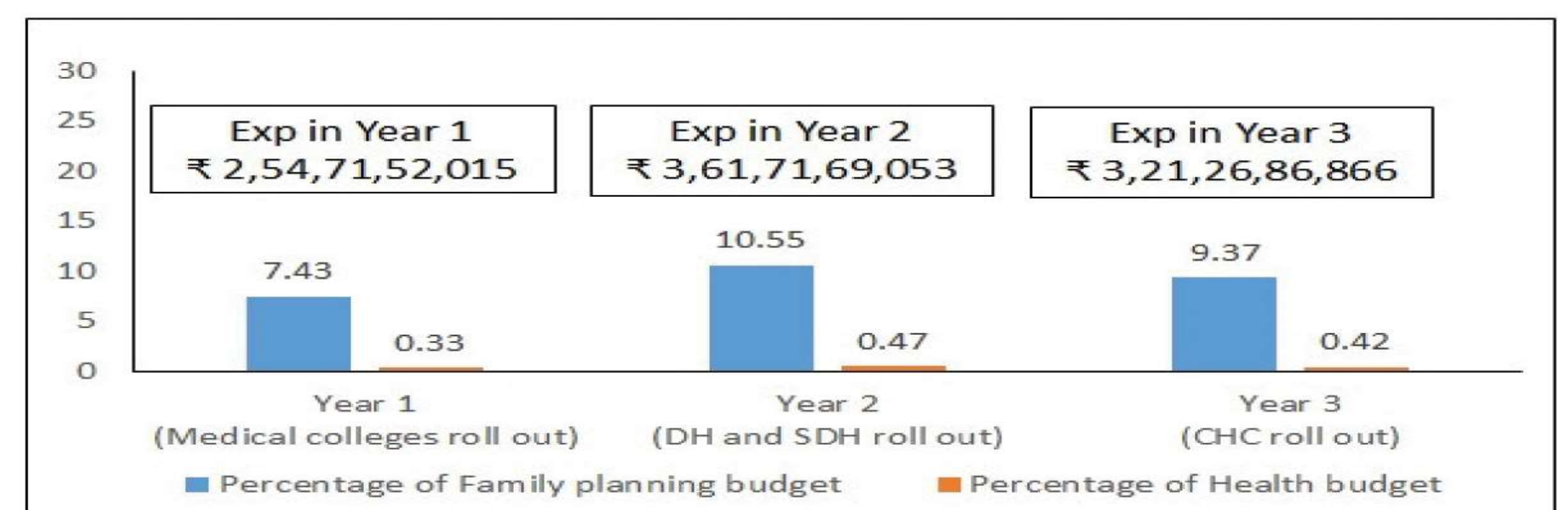
### CONCLUSIONS

- The Nexplanon intervention is very cost-effective, using the comparator as the threshold of GDP per capita.

### METHODS

- A systematic review for clinical effectiveness of Nexplanon was performed.
- Extensive literature review for other contraceptive methods, costing, cost-effectiveness, quality of life during contraceptive use and related states and HTA on Nexplanon
- Primary collection for cost data from four levels of public health system in Maharashtra
- Estimation of age specific transition probabilities from Calendar data of National Family Health Survey-4
- Review of literature on social and ethical issues
- An economic evaluation to assess whether adding Nexplanon to the current system would be cost-effective. This involved conceptualization and running a decision analytic model (Markov model)

#### Expenditure for Nexplanon as %age of Family planning Budget and Total health budget



### RECOMMENDATION

- Addition of Nexplanon to current Family planning scenario in the public health sector of India is found to be cost-effective. It could be considered for program introduction to improve the contraceptive basket of choice in a phased manner. The model shows that larger the proportion of method users, the higher is the cost-effectiveness.
- The pre-requisites recommended for Nexplanon introduction into the public health sector of India are:
  - Conducting feasibility and acceptability studies before introducing Nexplanon with due consideration to ethical issues of autonomy and coercion.
  - Creating awareness regarding Nexplanon among all stakeholders and eligible couples.
  - Program introduction could be phased top-down from Medical Colleges to 24x7 PHC level manned by Medical Officers (MBBS), as Nexplanon requires surgical removal.
  - Effective pre-insertion counselling and preparedness for management of side-effects by trained health personnel.
  - Efficient follow-up and tracking mechanism for users of Nexplanon.