

## **Title: Surgical Sterilization in India - Disparity Between Vasectomies and Tubectomies in 2019-20**

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**Background:** Despite strong family planning efforts, the progress in India has been marred by gender-based inequalities in sterilization uptake. We investigated the differences in surgical sterilization uptake, specifically vasectomies and tubectomies in India.

**Methods:** We conducted a retrospective analysis using the Health Management Information System (HMIS) data from April 2019 to March 2020 as accessed through the National Data & Analytics Platform. Data on surgical sterilization procedures in 704 districts across 28 states and 9 union territories was included. Rate of sterilization and female-to-male sterilization ratios were computed to assess gender-based inequality in sterilization uptake. For rates, the population in the reproductive age (RA) group - 15-49 years for both men and women was taken from IHME forecast for 2020. Rates of sterilization, complication, failure and death rates were calculated per 10000 procedures.

**Findings:** HMIS reported 3,452,780 surgical sterilizations in 2019-20 with 3,402,966 tubectomies and 54,817 vasectomies. The rate of surgical sterilization is 9.04 per 10000 women of RA and 1.3 per 10000 men of RA. The national female-to-male surgical sterilization ratio was 61.5. Among states, the ratio was highest in Karnataka (375) and lowest in Chhattisgarh (9). There were 17 districts with no surgical sterilizations performed and 94 districts that had no vasectomy done in the year. Nationally, the complication rates were 517 and 30 for vasectomies and tubectomies, respectively. Among states, the highest rate of complication following vasectomy was seen in Arunachal Pradesh (5000) and that following tubectomy in Puducherry (189). Nationally, failure rates were 13 per 10000 vasectomies and 7 per 10000 tubectomies. Among states, Mizoram (2500) had the highest post-vasectomy failure rate while Haryana (21) had the highest post-tubectomy failure rate.

**Interpretation:** Our findings confirm gender gap in the uptake of surgical sterilizations in India. Complication and failure rates were higher following vasectomy than tubectomy. Further studies should focus on the determinants of differential surgical sterilization uptake and outcomes.

**Source of Funding:** None



## Surgical Sterilization in India

### Disparity Between Vasectomies and Tubectomies in 2019-20

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**Background**

- Despite strong family planning efforts, the progress in India has been marred by gender-based inequalities in sterilization uptake. Even though female sterilization is more invasive procedure, still forms a major portion of surgical sterilization in India.
- Our aim is to investigate the differences in surgical sterilization uptake, specifically vasectomies and tubectomies in India.

**Methods**

**Study Design-** Retrospective secondary data analysis

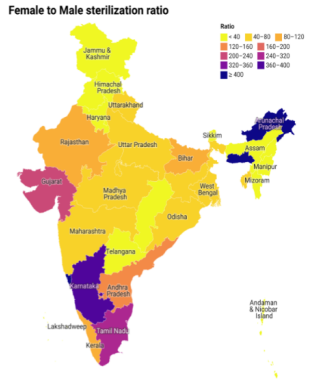
**Data Sources-** Health Management Information System (HMIS) from April 2019 to March 2020 and IHME population forecast for 2020.

**Data Analysis-** Data on surgical sterilization procedures in 704 districts across 28 states and 9 union territories was included.

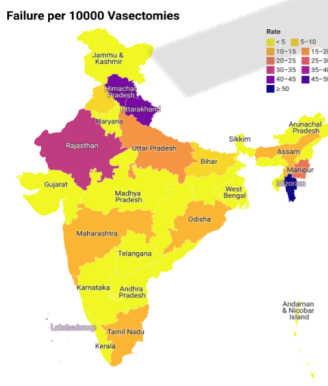
- Rate of sterilization and female-to-male sterilization ratios were computed to assess gender-based inequality in sterilization uptake.
- For rates, the population in the reproductive age (RA) group 15-49 years for both men and women was taken from IHME population forecast for 2020.
- Rates of sterilization, complication, failure and death rates were calculated per 10000 procedures.

**Results**

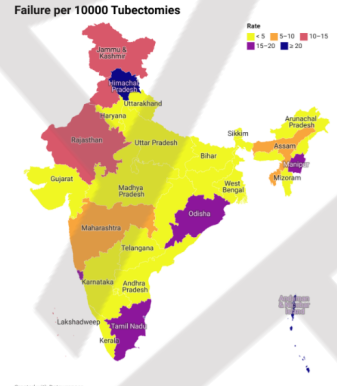
- HMIS reported 3,452,780 surgical sterilizations in 2019-20 with 3,402,966 tubectomies and 54,817 vasectomies.
- The rate of surgical sterilization was 9.04 per 10000 women of RA and 1.3 per 10000 men of RA.
- Nationally, the complication rates were 517 and 30 per 10000 vasectomies and tubectomies, respectively.
- Among states, the highest complication rates were seen in Arunachal Pradesh (5000 per 10000 vasectomies) and Puducherry (189 per 10000 tubectomies).



- The national average ratio of female to male sterilization was 61.5.
- Among the states, highest ratio was seen in Karnataka (375) and lowest ratio was seen in Chhattisgarh (9).



- Average failure rate in India was 13 per 10000 vasectomies.
- State-wise highest failure rate was seen in Mizoram (2500 per 10000 vasectomies).



- Average failure rate in India was 7 per 10000 tubectomies.
- State-wise highest failure rate was seen in Haryana (21 per 10000 tubectomies).

**Conclusion**

- Our findings confirm gender gap in the uptake of surgical sterilizations in India.
- Failure and complication rates were higher for vasectomies than tubectomies.
- Future studies should focus on the determinants of differential surgical sterilization uptake and outcomes.

**References**

National Data Analytics Platform  
<https://ndap.niti.gov.in/>  
 Institute for Health Metrics and Evaluation  
<http://vizhub.healthdata.org/gbd-compare>

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